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Assessment of the Appropriateness of
Inpatient Mental Health Services at Naval Hospital Camp Pendleton Given
the Global War on Terrorism Environment

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Abstract

This GMP assessed the appropriateness of establishing inpatient mental health services at NHCP given the increased combat exposure to armed forces during the GWOT. To complete this study, both quantitative and qualitative information were employed in a Business Case Analysis. Hart and Connors' Resourcing Decision Model was utilized to assess if the proposal made good business sense and if it was the right thing for the patient. Quantitative results were a FY 2006 net investment of \$1,362,000.00, a cost avoidance of \$1,054,800.00, a net loss of \$307,200.00 and a ROI of -23%. The cumulative net investment in FY 2011 is \$6,823,800.00, a cost avoidance of \$6,416,100.00, a net loss of \$407,700.00 and a ROI of -6%. Qualitative results indicate that NHCP could provide a superb patient care environment, however the actual quality of care that would be rendered is a projection. It is recommended based on the financial results and current adequate arrangements for providing inpatient mental health services that such care should not be provided at Naval Hospital Camp Pendleton.

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Introduction

Captain Steven Nichols became the Commanding Officer of Naval Hospital Camp Pendleton (NHCP) on July 27th, 2005. Since that time he has delineated his patient-centered vision clearly to the Executive Steering Council (ESC) and to the hospital staff at every opportunity. One aspect of that vision was inpatient mental health services, which NHCP no longer offers. The closure of inpatient mental health services was completed in January of 2000, before the Global War on Terrorism (GWOT). Captain Nichols' concern for whether NHCP was doing the right thing for its patients has posed the following question for the ESC, Multi-Service Market Office (MSMO) in San Diego and Navy Medicine West (NMW): Is it still appropriate to continue to send patients to Naval Medical Center San Diego (NMCSD) for inpatient mental health care given the current wartime environment?

The impact of the GWOT has been tremendous for the Armed Services. Since the GWOT, active duty members, their families and their units are stretched for resources given the increased operation tempo demands. The impact of this war and the stress it produces are evident with statistics such as the Marine Corps suffering a 29 percent spike in suicides in 2004 as compared to 2003. This data made 2004 the year with the highest number of suicides in the last decade. Marine Corps leadership has attributed the increase in suicides to the increased operation tempo.

Thirty-one Marines committed suicide in 2004, all of them enlisted men, not commissioned officers. The majority were younger than 25 and took their lives with gunshot wounds, according to Marine statistics. Another 83 Marines attempted suicide. There were 24 suicides in 2003, and there have not been more than 29 in any year in the last 10. (Tyson quoting Hagee, 2005)

Balancing suicide statistics such as these, the expected lengthy continuation of the increased operation tempo and the ever rising Department of Defense (DoD) health care budget, NHCP leadership must answer the poignant question: What is the right thing to do for our Marines and Sailors?

In support of the relevance of this question are citations from the Assistant Secretary of Defense for Health Affairs, Dr. William Winkenwerder and Navy Medicine's own mission, vision, and guiding principles. During an August 2005, interview with *Health Affairs'* correspondent Robert Galvin, Dr. Winkenwerder stated the mission of military medicine is "... to protect and save people's lives and to restore their health as quickly, effectively and efficiently as possible." (2005, p.W5-353)

Below are the Navy Medicine's mission, vision, and guiding principles:

Our Mission:

Our mission is Force Health Protection.

- We promote, protect and restore the health of our Sailors and Marines, families, retired veterans and all others entrusted to our care, anytime, anywhere.

Our Vision:

Navy Medicine will be the provider of choice by achieving superior performance in Health Services and Population Health.

Our Guiding Principles

We believe:

- Navy's Core Values - HONOR, COURAGE, COMMITMENT - are the bedrock of Navy Medicine.

- Health to be a complete state of physical, mental, spiritual and social well being, not simply the absence of infirmity or disease.
- Force Health Protection is our expression of core values.
- Our business focus is: Readiness – Optimization – Integration (ROI).
- To achieve ROI we use sound business practices as well as the philosophy of continuous improvement in all the activities of our enterprise.
- Our people are our most important resource, and their dignity and worth are maintained through an atmosphere of service, professionalism, trust and respect.
- Education and research form the foundation of our future.
- Success is judged by our patients and customers (BUMED, 2004, FY 04 Strategic Plan Update, ¶ 2,3).

While an important aspect of Navy Medicine's mission is to "restore the health of our Sailors and Marines, families, retired veterans", an equally important responsibility are the guiding principles of "optimization and integration", also delineated in Navy Medicine's mission. The two must be balanced in order to sustain the medical benefit, doing the "most good" for the most eligible beneficiaries.

Statement of the question

Prior to the GWOT many Military Treatment Facilities (MTF) closed or consolidated services in order to be more efficient and cost effective. As such, many MTF leaders may be asking similar questions regarding services that were discontinued at their MTFs. Specifically, for NHCP and this project, that question is:

Is it appropriate to not offer inpatient mental health services at Naval Hospital Camp Pendleton given the Global War on Terrorism Environment?

While closing inpatient mental health services may have made sound financial sense before GWOT, this Graduate Management Project (GMP) will assess whether the loss of that service leaves a gap in supporting our troops and beneficiaries by admitting them to a MTF that is located 40-80 miles from their families and units. This is particularly important given the changed environment produced by the GWOT, as well as the housing boom in San Diego County.

This study will assess the financial cost of staffing an inpatient mental health unit, the required facility upgrades and equipment, the projected utilization of mental health inpatient services, as well as address the quality of care concerns regarding services that would be rendered by an NHCP inpatient mental health unit. This project will evaluate the cost for inpatient mental health services in two scenarios: status quo and the reestablishment of NHCP inpatient services.

Background

The following background information is provided for familiarity of Marine Corps Base Camp Pendleton, such as location and population. It was obtained from the Official Website for Marine Corps Base Camp Pendleton (2005):

- located approximately 40 miles north of downtown San Diego
- covers over 125,000 acres and approximately 200 square miles of terrain
- provides training facilities for active-duty and reserve Marines, Army and Navy units, as well as national, state and local agencies
- over 60,000 military and civilian personnel work on the base

- units assigned are the I Marine Expeditionary Force, 1st Marine Division, 1st Marine Logistics Group and many tenant units, including elements of Marine Aircraft Group 39 and Marine Corps Tactical Systems Support Activity

Additionally, Figure 1 and Figure 2 provide a relation view of the location of NHCP and the on-base and external branch clinics that are under NHCP's leadership purview.

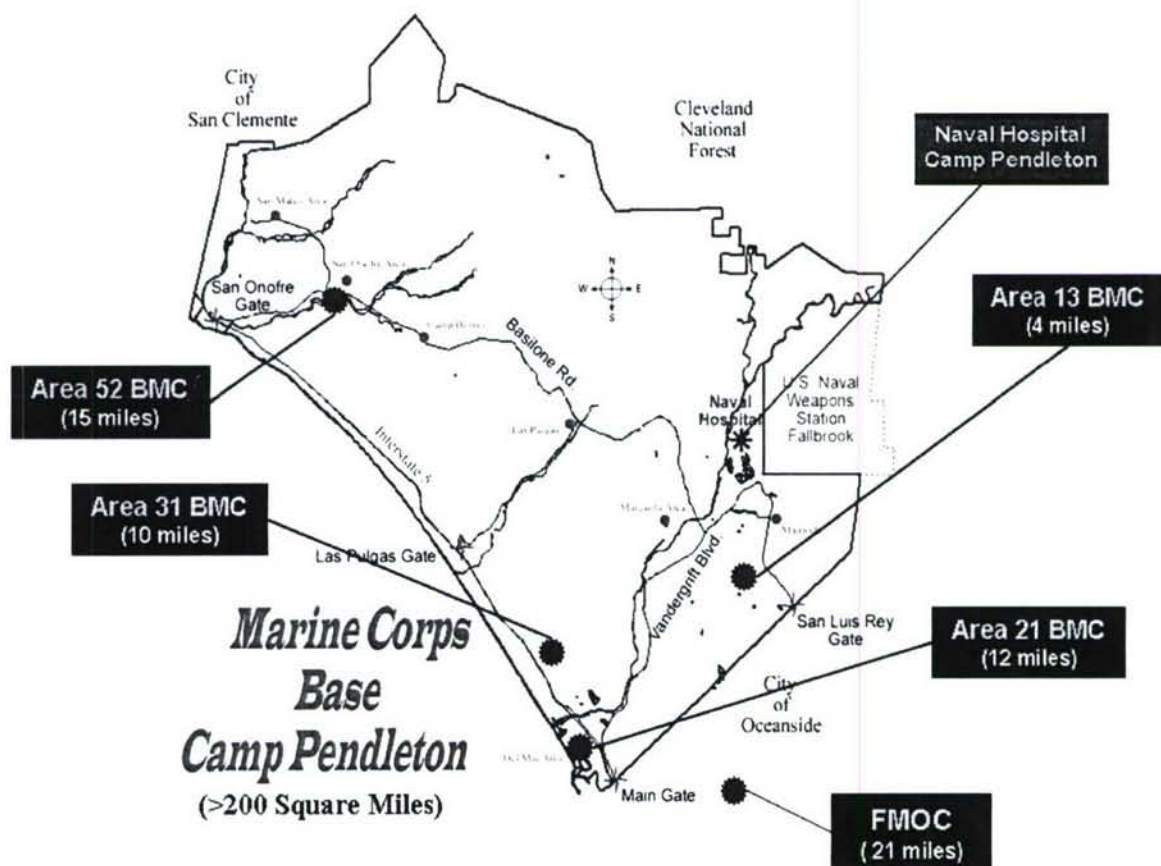


Figure 1. Branch Clinics located on Marine Corps Base Camp Pendleton.

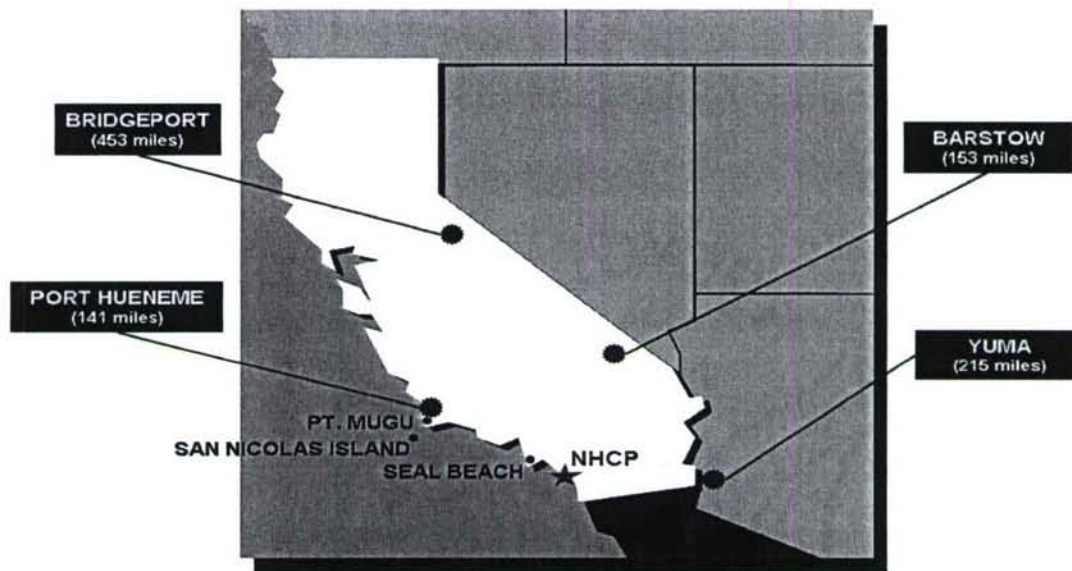


Figure 2. NHCP Branch Clinics located outside Marine Corps Base Camp Pendleton.

Over recent years the large population growth in San Diego County has impacted automobile travel and affordability of housing. Due to the large economic growth in the local housing market many people move north and east of San Diego County resulting in longer commutes. Traffic congestion has caused increased travel times between NHCP and NMCSO and travel time can vary between one and two hours between the two MTFs. Furthermore, since San Diego County is one of the nation's highest cost of living areas, personnel often choose to live northeast of Marine Corps Base Camp Pendleton. For a perspective on the distance to NMCSO, the closest northeast city from Marine Corps Base Camp Pendleton is Fallbrook (a distance of 56 miles) and furthest, but commonly commuted from, is Hemet (a distance of 84 miles).

Inpatient Mental Health Services were discontinued at NHCP at the end of the 1st quarter, Fiscal Year (FY) 1999. In late 1998 NHCP's Mental Health Department conducted an eight

week pilot project involving the admission of NCHP mental health patients to NMCS D. In March of 1999, the Commanding Officer of NHCP, then Captain T.K. Burk hart, submitted a request to Bureau of Medicine and Surgery (BUMED) for the permanent closure of inpatient mental health at NHCP (T.K. Burk hart, letter, March 18, 1999). The key rationale for the closure was shortages of nursing and technician staff. As the quality of care and staffing requirements increased over the years, the available personnel at NHCP were unable to meet the requirements. (J.C. Ho, per phone conversation, February 28th, 2006). Low demand for mental health inpatient care also impacted the decision to combine services with NMCS D. Inpatient mental health admission data from the Medical Expense and Reporting System (MEPRS) from the FYs 1996-1999 are provided in Table 1 for a historical background.

Table 1

Past Naval Hospital Camp Pendleton Inpatient Mental Health Data

	FY 1996	FY 1997	FY 1998	^a FY 1999
Admissions	206	231	233	23
Bed days	1938	1487	982	108
Avg. Length of Stay	9	6	4	5
Daily census based on ALOS	5	4	3	1

Note: The source for this data is the Medical Expense and Reporting System for fiscal years 1996-1999. Monthly average is rounded to the nearest whole number.

^aFor fiscal year 1999 only three months of data are available due to closure after the first fiscal quarter.

In February of 2000, the Surgeon General of the Navy, then Vice Admiral Richard A. Nelson, authorized the permanent closure of the inpatient psychiatric unit at NHCP (R.A.

Nelson, letter, February 23, 2000). This was in alignment with previous authorization from the Assistant Secretary of the Navy, Manpower and Reserve Affairs (letter, December 7th, 1999). Since the closure of inpatient mental health, all admissions have been referred to NMCS D for all forces enrolled to the NHCP core Defense Medical Information System (DMIS) Identifier (ID), as well as the catchment area operational forces and any other MTFs that formerly referred mental health inpatients to NHCP.

A concrete history was not established regarding the actual transfer of billets to NMCS D to support the additional workload. A letter was obtained from NHCP's Acting Commanding Officer (letter, March 10th, 2003), which officially requesting authorization from BUMED to permanently move one neuro-psych technician billet from NHCP to NMCS D. During the quarterly MSMO meeting, the Director for Mental Health at NMCS D, Captain Freda Vaughan, reported that one psychiatrist billet was also moved (F.K. Vaughan, MSMO Quarterly Meeting, January 23rd, 2006).

In addition to the staffing shortages, it is likely the downsizing of the armed forces and changes in mental health practices impacted the decision to decrease duplication of inpatient mental health services in the Southern California market area. Since 1988 four separate commissions have completed a series of Defense Base Realignments and Closures (BRAC) (Global Security website, 2005). These realignments and closures have resulted in several Department of Defense (DoD) medical services being consolidated or closed. Based on the external forces and the NHCP staffing concerns, it made economical sense for the Southern California MTFs to consolidate and efficiently use resources, thus closing inpatient mental health at NHCP and transferring these patients to NMCS D. Furthermore, changes in mental health practices including increased use of psychotropic medication (Zuvekas, 2005) and the decrease

in average length of stay (ALOS) for inpatient mental health care (Mechanic & Bilder, 2004) have likely impacted the demand for such services at NHCP.

On September 11th, 2001 the United States was profoundly impacted by the terrorist events that took place. The President of the United States and Congress declared the GWOT, consequently changing the military's mission. This new mission was further compounded in 2003 with the launch of Operation Iraqi Freedom (OIF). The impact to the local active duty population, similar to the rest of the Armed Forces, has been increased deployments and the exposure of military personnel to the emotional traumas of war.

Literature Review

This literature review will examine mental health issues before and since the inception of the GWOT, as well as quality of care outcomes, patient satisfaction and patient centered care. Before the GWOT, Hoge, Lesikar, Guevara, Lange, Brundage, Engel, Messer and Orman (2002) completed a study examining the impact mental health disorders of military personnel have on health care utilization and occupational functioning. Their findings concluded that nearly 50 percent of all personnel hospitalized between 1990 and 1999 were discharged from the service within six months of their first diagnosis with a mental disorder. Conversely, only 12 percent of military personnel were discharged within six months when diagnosed with any of the other 15 International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) categories studied. Additionally, Hoge et al. noted that of 16 major ICD-9-CM categories studied, admissions for mental health disorder declined the least over the years studied, making mental health disorders the second leading cause of hospitalization in military personnel since 1995. This study also noted that it appeared mental health disorders were the most resistant to managed care strategies (2002).

The consideration to offer mental health inpatient services at NHCP was fundamentally related to the changed environment for our patients and customers due to the GWOT. The assumption was made that exposure to combat would produce higher levels of mental illness in the U. S. Armed Forces. This assumption has proven accurate by a landmark study completed by Hoge, Castro, Messer, McGurk, Cotting and Koffman (2004). Combat operations have caused an increase in depression, anxiety and Post Traumatic Stress Disorder (PTSD) among the military population as found by Hoeg et al. who surveyed troops prior to and after returning from deployments to Iraq and Afghanistan. Specifically, Hoge et al. state the results of their study as:

The percentage of study subjects whose responses met the screening criteria for major depression, generalized anxiety or PTSD was significantly higher after duty in Iraq (15.6 to 17.1 percent) than after duty in Afghanistan (11.2 percent) or before deployment to Iraq (9.3 percent); the largest difference was in the rate of PTSD. (p. 13)

Despite these results showing increased depression, anxiety or PTSD in returning troops, it has been noted by NHCP and NMCS military mental health professionals that these specific illnesses do not typically require an inpatient stay. Offering inpatient mental health services will not necessarily address the mental health needs of today's military force. Nevertheless, these diagnoses carry the stigma of mental illness, therefore precludes many active duty from seeking care. Hoge et al. (2004) also found in their study that those in most need of mental health services reported the potential stigma as a barrier to seeking care. Health care leaders should consider that as a result of not seeking care for mental health issues, over time, service members may acquire severe mental health issues that may require inpatient services.

The demand for mental health services exclusively should not be the driving factor when deciding to offer services. NHCP leadership must consider the quality of care it may or may not

be able to render. Druss, Miller, Pincus, and Shih (2004) utilized Health Employer Data and Information Set (HEDIS) measures of mental health performance to determine whether a parallel association exists between volume of mental health delivery and the quality of mental health care, such as that which is found in outcomes for surgical care and other medical procedures. Their findings were that “HMOs with lower inpatient and outpatient volumes of care were consistently and substantially more likely to perform poorly on the HEDIS mental health performance measures” (p, 2283). It should be noted that measuring mental health outcomes and comparing the results to surgical procedure outcomes is not an ideal method of assessing quality of care rendered due to the significant differences between the types of diagnosis and treatment. Low patient census might not provide an adequate therapeutic milieu for the mental health patient. However, low patient census can be interpreted in two ways: 1) there will not be enough of similar diagnosed patients in order to provide a learning/therapeutic environment or 2) fewer patients mean more focused care for those who are admitted.

In general, a patient’s idea of quality is more often based on their satisfaction with care. Rosenheck, Wilson, and Meterko (1997) conducted a survey of Veterans Administration mental health patients. Their findings indicated patients were less satisfied in large institutions and facilities that focused on research and education. These findings indicate that NHCP could potentially provide care that is more personable and thus more satisfying to the patient than NMCSD, a large teaching facility. The relevance of this study as it applies to military health care are the institutional similarities, that is, both are vast in services provided and government administered. One key difference that should be noted when interpreting the Rosenheck et al. (1997) study is the population. A majority of the respondents in the Veterans Administration mental health study were older where as the military has a younger population.

Hart and Connors (1996) developed a Resourcing Decision Model which includes three key questions MTF leaders need to address when making resource allocation decisions. Hart and Connors (1996) state the three corners of their model are, “(1) Does the proposal make good business sense?; (2) Does it contribute to readiness?; and (3) Is it the right thing for the patient?” (p.552). Of particular interest is the last question which clearly delineates the quality of life issues this project will focus on through site visits and interviews. Hart and Connors (1996) make the following statement when amplifying this question:

One has to be careful here not to assume that the outcome for the patient is automatically better by virtue of receiving services in a tertiary-care center than in the local hospital.

Proximity to family, familiar surroundings, trust in local providers, personalized care, all may have a profoundly beneficial effect on patient outcome. (p. 554)

As can be observed from this literature review, all of these concepts: quality outcomes, patient satisfaction, resourcing and patient centered care provide pros and cons for offering services at NHCP.

Method

This GMP will assess whether or not to reinstate inpatient mental health services at NHCP given the inception of increased combat exposure to armed forces during the GWOT. To complete this study, both quantitative and qualitative information were employed in a Business Case Analysis (BCA). Return on Investment (ROI), cumulative investment, cumulative cost avoidance/savings and cumulative net savings/loss were utilized, in addition to the qualitative findings, in determining whether to accept or reject this project.

This analysis will utilize two facets of the previously mentioned Hart and Connors’ (1996) Resourcing Decision Model. Specifically, the first and third questions, which concentrate

on good business sense and the right thing for the patient, will be addressed in this study. Due to time constraints, the construct of readiness could not be defined and measured, therefore it is not assessed.

Finally, strict protection for patient privacy was exercised to ensure ethical compliance during this analysis. Specific patient identifiers were not utilized and only aggregate data were analyzed.

Scope and Time frame

The San Diego Veterans Administration Medical Center (VA), Tri-City Medical Center in Oceanside, California and NMCSD were visited for a comparison and ideal vision of environment to provide inpatient mental health services at NHCP. Additionally, leadership from the San Diego MSMO was met with to collect information for consideration in this initiative.

The time frame for conducting this analysis was between September 2005 and April 2006. Active duty mental health inpatient admissions to NMCSD for FYs 2002-2005 from NHCP's DMIS ID and other MTFs in Southern California and Fallon, Nevada area were utilized to determine the potential demand for inpatient mental health services at NHCP. Figure 3 is provided to show the location of Marine Corps Base Camp Pendleton as compared to NMCSD when considering proximity to other military bases in Southern California. Table 2 is provided to show the MTF's name and admissions for each year.

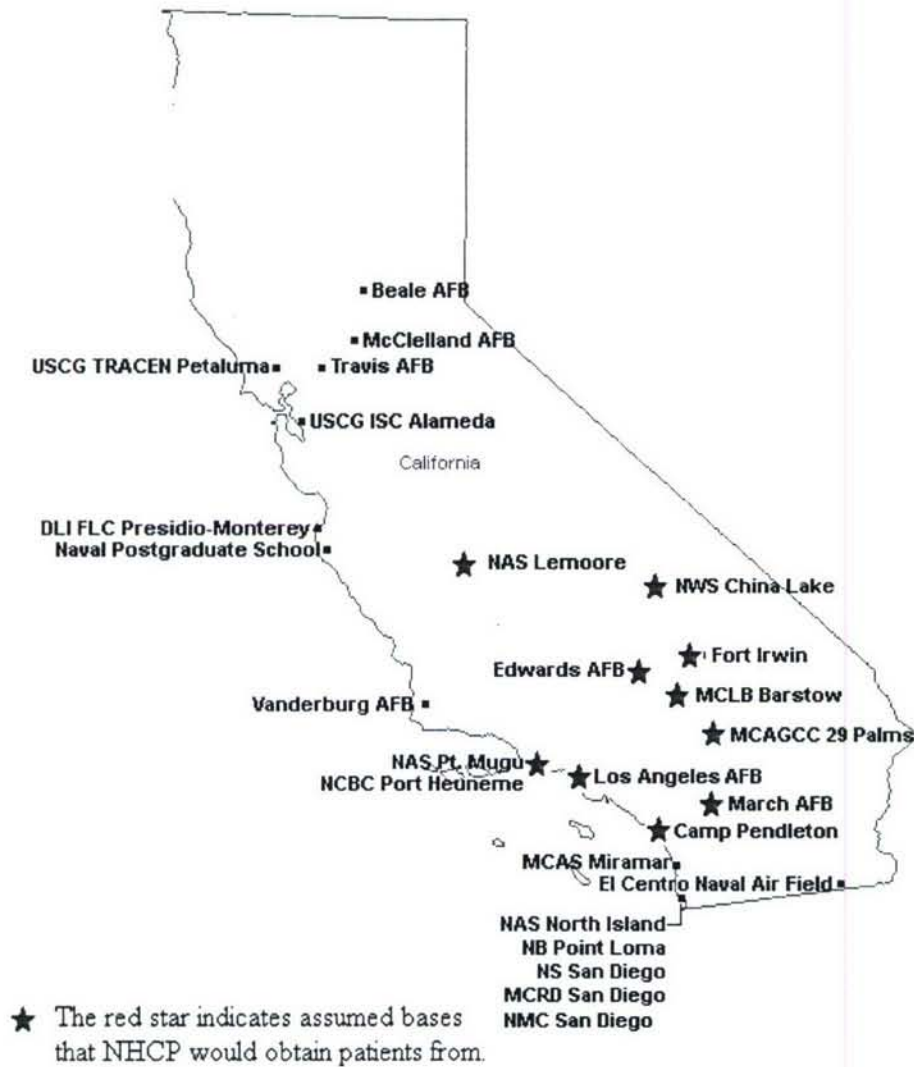


Figure 3. Major military installations located in the state of California.

Table 2

Active Duty Mental Health Inpatient Admissions to NMCS D from MTFs in the Southern California and Nevada area

	FY 2002	FY 2003	FY 2004	FY 2005
^a Naval Hospital Camp Pendleton	86	60	60	92
^b Naval Hospital Twentynine Palms	34	21	20	38
^c Naval Hospital Lemoore	3	2	3	3
Weed Army Medical Center	8	6	9	29
61 st Medical Squadron at Los Angeles		2		3
95 th Med. Group Edwards AFB				5
BMC China Lake	3	2	1	
BMC Fallon	1	1		

Note: The source for this data is the NMCS D active duty admission data for those enrolled to the above listed MTF's, with the Diagnosis Related Groups (DRG) of 424, 425, 426, 427, 428, 430, and 432, FYs 2002-2005 were collected from the M2. ^a Includes all parent, child and operational DMIS IDs for NHCP. ^b Includes all Naval Hospital and operational DMIS IDs for Naval Hospital Twentynine Palms. ^c Includes all Naval Hospital and operational DMIS IDs for Naval Hospital Lemoore.

Quantitative

The quantitative analysis was conducted by completing a BCA using the 2005 Venture Capital Initiative (VCI) tool from the Tri-Service Business Planning Tool, see Appendix A for relevant worksheets. The 2005 VCI tool was chosen over the 2006 VCI tool because of the Prospective Payment System (PPS) payment calculator in the 2006 VCI tool. The 2006 VCI

tool's PPS reimbursement calculator significantly underestimated the actual reimbursement rate. This was in addition to the already decreased reimbursement rate (approximately 50 percent lower for FY 2006) that is being utilized as the military migrates over to basing its MTF's annual budgets on the PPS.

The quantitative data were collected utilizing the M2 datamart, MEPRS historical data, the CHAMPUS Maximum Allowable Charge (CMAC) rate, estimated costs from NHCP's Facilities Department, NHCP's Materiel Management Department, Pharmacy Department, Laboratory Department and the local market salaries. The VCI tool was populated with the collected data in order to project the cumulative investment, cumulative cost avoidance/savings, cumulative net savings/loss and the cumulative return on investment (ROI) for the next six fiscal years.

FYs 2002-2005 active duty admissions to NMCS D by those enrolled to the MTFs listed in Table 2 were utilized to forecast demand. Specifically, patient admission data with the Diagnosis Related Groups (DRG) of 424, 425, 426, 427, 428, 430, and 432, were collected from the M2 datamart. These data were utilized to forecast potential NHCP mental health inpatient admissions for FYs 2006-2011. See Table 3 for DRGs utilized in forecasting inpatient demand.

Table 3

Diagnosis Related Groups Utilized to Forecast Inpatient Mental Health Demand

DRG Code	Clinical diagnosis
424	Procedure with principal diagnosis of mental illness
425	Acute adjustment reaction
426	Depressive neurosis
427	Neurosis, except depressive
428	Disorders of personality
430	Psychosis
432	Other mental disorders

FYs 2004 and 2005 active duty admissions to civilian hospitals were also utilized to forecast demand for the FYs 2006-2011. Specifically, active duty inpatients enrolled to NHCP's parent and child DMIS IDs with a diagnosis of the DRGs of 424, 425, 426, 427, 428, 430, and 432 were utilized to forecast the potential Private Sector Care that NHCP could recapture. Other Southern California MTFs were not included in forecasting the Private Sector Care admissions due to each MTF's responsibility for financing the care of their enrolled active duty members under existing policy. Under the current Department of Defense budgeting system, other MTF's Private Sector Care admissions would not be a cost to or revenue gain for NHCP.

The Single Exponential Smoothing method for forecasting was employed utilizing the Crystal Ball Predictor software. This method was chosen based on its appropriateness for volatile data that shows no trends or seasonality, such as the as the NMCSd active duty admission data

and civilian hospital active duty admission data collected. The total civilian hospital care cost for FYs 2004 and 2005, \$199,383.00, was divided by the total FYs 2004 and 2005 admissions of 66, for an average cost per admission. This average cost was input into the VCI tool in order to calculate a Private Sector Care cost per admission. The annual forecasted total of active duty admissions to NMCS D was added to the annual forecasted total civilian hospital admissions for a total of potential active duty admissions to be employed in the VCI tool.

DRGs 433, 468, 470, 521, 522, 900 and 901 were not utilized to estimate inpatient mental health demand at NHCP. These DRGs were not specific mental health diagnosis or they were associated with a substance abuse diagnosis. See Table 4 for DRGS not utilized in forecasting inpatient demand. At the time of this study, NHCP's substance abuse residential treatment was under consideration for consolidation with the Substance Abuse and Rehabilitation Program (SARP) located on the Naval Submarine Base, Point Loma, California. It was determined to be more efficient to admit the patients with these DRGs to NMCS D and then transfer them to SARP Point Loma due to the proximity of the two care centers. Therefore, patients enrolled to NHCP or its child DMIS IDs and diagnosed with alcohol related illnesses were excluded from the demand estimate for NHCP inpatient mental health.

Table 4

Diagnosis Related Groups Not Utilized to Forecast Inpatient Mental Health Demand

DRG Code	Clinical diagnosis
433	Alcohol/drug use, Leave Against Medical Advice
468	Extensive Operating Room procedure unrelated to principal diagnosis
470	Ungroupable
521	Alcohol/drug or dependence with CC
522	Alcohol/drug abuse or dependence w/ rehab therapy w/o CC
900	Alcohol/drug abuse or depend, w/o rehab therapy age ≤ 21 w/o CC
901	Alcohol/drug abuse or dependence w/o rehab therapy age ≥ 21 w/o CC

Note: CC is shortened for complications or co-morbidity.

Family members and other beneficiary types were not utilized in calculating admission demand due to the difficulty of accurately estimating non-active duty admissions. For a hospital, such as NHCP, to avoid cumbersome legal proceedings, a policy of admitting exclusively voluntary non-active duty eligible beneficiaries would be adhered to. Because of this policy it is difficult to estimate a potential number of non-active duty admissions.

Concepts such as defensive medicine and “if you build it they will come” could cause an increase in the utilization of new mental health inpatient services. While both of these concepts should be considered, there is no reliable method for projecting these types of health service demands; therefore neither concept was utilized in projecting demand.

NHCP's Facilities Department provided cost estimates for facility upgrades, see Figure 4.

NHCP's Materiel Management Department provided cost estimates for the required furniture and equipment, see Figure 5.

<i>Mental Health Ward 3C 12 2005</i>						
Qty	Description	Unit	Bare Mat.	Bare Labor	Total	Total Incl. O&P
12	Door hardware, entrance lock cylinder	Ea.	\$1,404.00	\$396.00	\$1,800.00	\$2,340.00
2000	Ceiling demolition, support wires for ceiling insulation, on suspension system, remove	S.F.	\$0.00	\$1,220.00	\$1,220.00	\$1,586.00
2000	Ceilings, grid suspension system, direct hung, 1-1/2" C.R.C., w/7/8" hi hat furring channel, 16" O.C.	S.F.	\$1,700.00	\$10,000.00	\$11,700.00	\$15,210.00
2000	High Abuse Gypsum Board, on ceilings, w/compound skim coat (level 5 finish), 5/8" thick	S.F.	\$1,220.00	\$22,000.00	\$23,220.00	\$30,186.00 \$0.00
150	Partition Wall, interior, standard, taped both sides, 8' to 12' high, 1/2" gypsum drywall		\$0.00	\$0.00	\$0.00	\$0.00
150	Partition Wall, interior, fire resistant, 2 layers, 1 1/2 hour, taped both sides, installed on & incl. 25 ga, NLB metal studs, 3 5/8" wide, 16" O.C., 8' to 12' high, 1/2" gypsum drywall	S.F.	\$198.00	\$358.50	\$556.50	\$723.45
9000	Paints & Coatings, Repair and prep walls		\$330.00	\$12,400.00	\$12,730.00	\$16,549.00
	Remove misc fittings and equipment, repair walls			\$11,000.00	\$11,000.00	\$14,300.00
9000	Painting, walls, wallboard and smooth plaster, one coat, roll	S.F.	\$1,550.00	\$23,800.00	\$25,350.00	\$32,955.00
2000	Painting, ceilings					\$0.00
2000	Dry fall painting, ceilings, wallboard and smooth plaster, one	S.F.	\$1,050.00	\$8,250.00	\$9,300.00	\$12,090.00
1	Install plexiglass window replacing glass	ea	\$55.00	\$285.00	\$340.00	\$442.00
50	Remove Receptacle with #12/2, 20 amp, incl box & cover plate	Ea.	\$1,450.00	\$1,500.00	\$2,950.00	\$3,835.00
Totals			\$8,957.00	\$91,209.50	\$100,166.50	\$130,216.45

NOTES: there are many undetermined needs, such as:

Outside exercise area repairs have not been determined

The rough estimate of \$200-300K could be doubled depending on the resolution and choices made for undetermined items

Figure 4. Estimated cost of facility upgrades to institute inpatient mental health at NHCP.

Equipment List for Inpatient Mental Health				
Equipment	Number	Location	Price	Total
Beds	6	Two in Rm #3174, four in Rms #3177, 80, 34	\$850.00	\$5,100.00
Table and chairs	2	Day room, Rm #3167 and Group room, Rm #3159	\$497.00	\$994.00
Bedside table	6		\$283.00	\$1,698.00
Sofa	2	Day room	\$600.00	\$1,200.00
Chairs	10	Five in Day room and five in Group room	\$600.00	\$6,000.00
Washing machine	1	Utility room, Rm# 3182	\$861.00	\$861.00
Dryer	1	Utility room, Rm# 3182	\$695.00	\$695.00
Refridgerator	1	Nurses Station, Rm #3160	\$825.00	\$825.00
Spring loaded shower curtain rods	8	Each bathroom	\$4.34	\$34.72
Exam table	1	Exam room, Rm #3161	\$3,547.20	\$3,547.20
Desk	1	Interview room, Rm #3162	\$676.00	\$676.00
Chairs	5	Interview room, Rm #3162	\$288.00	\$1,440.00
Plastic waste recepticles	15	Each room	\$2.58	\$38.70
Free standing Basketball hoop	1	Roof/Exercise area	\$359.00	\$359.00
Board games	5	Various	\$30.00	\$150.00
TV	1	Group room	\$356.00	\$356.00
DVD Player	1	Group room	\$533.00	\$533.00
Computers	3	One in Interview room, Rm #3162 and two in Exam room, Rm #3161	\$1,200.00	\$3,600.00
Gymnastic mats	1	To cover floor on Rm #3169	\$159.95	\$159.95
Closed circuit TV (High end)	1	Station in Rm #3160, Cameras at entrance, all patient rooms, Rm #3167, 3169, and 3175	\$4,023.00	\$4,023.00
Totals				\$32,290.57

Figure 5. Estimated cost of equipment requirements to institute inpatient mental health at NHCP.

The salaries for the local market in the San Diego Metropolitan area were used for contract personnel's salary estimates. See Tables 5, 6 and 7 for local market salaries estimates. The VCI tool has no place for inputting military labor costs, therefore civilian positions were

substituted. Staffing levels utilized in this VCI were projected based on California state law requiring a 1:6 nurse to patient ratio for inpatient mental health. Based on this staffing requirement, the best financial decision is to offer six inpatient beds, thus potentially maximize the use of staff and fixed staffing costs.

Table 5

Psychiatric Physician Median Salary for the San Diego Metropolitan Area

	Median Amount
Base salary	\$173,897
Bonuses	\$4,830
Social Security	\$8,172
401k/403b	\$6,470
Disability	\$4,361
Healthcare	\$5,390
Pension	\$5,791
Time off	\$19,523
Total	\$228,433

Note: The source for this information salary is Salary.com April 13, 2006.

Table 6

Psychiatric Nurse Median Salary for the San Diego Metropolitan Area

	Median Amount
Base salary	\$56,363
Bonuses	\$27
Social Security	\$4,314
401k/403b	\$2,041
Disability	\$1,376
Healthcare	\$5,390
Pension	\$1,827
Time off	\$6,160
Total	\$77,498

Note: The source for this information salary is Salary.com September 15, 2005.

Table 7

Psychiatric Technician Median Salary for the San Diego Metropolitan Area

	Median Amount
Base salary	\$27,387
Bonuses	\$69
Social Security	\$2,100
401k/403b	\$994
Disability	\$670
Healthcare	\$5,390
Pension	\$890
Time off	\$2,999
Total	\$40,499

Note: The source for this salary information is Salary.com September 15, 2005.

The total ambulance service cost avoidance was input into the VCI tool under the Miscellaneous Benefit worksheet. The ambulance service cost avoidance was calculated by utilizing an estimated average ambulance cost to transfer patients from NHCP to NMCSO. An estimated cost of \$1200.00 per transport was provided by the NHCP Supplemental Care Office, which processes all of such claims for active duty beneficiaries. The estimated cost per transport was multiplied by the forecasted admissions to produce potential annual ambulance service cost avoidance.

Qualitative

The qualitative assessment included site visits to the San Diego Veterans Medical Center, NMCSO and Tri-City Medical Center which all provide inpatient mental health care. A survey was developed and utilized to review each behavioral health unit's staffing levels and mix, provider coverage, living environment, services offered and continuity of care. See Appendix B for the specific survey questions addressed. Specifically, San Diego Veterans Medical Center and Tri-City Medical Center were not assessed in this qualitative analysis as potential admission sites for active duty beneficiaries, but rather for a knowledge of the types of programs, safety features and facility design in order to help create a vision for NHCP's mental health unit. Additionally, traffic congestion has increased travel times between NHCP and NMCSO so the facility's proximity to potential patient's work and living location were also considered when assessing each facility. The information obtained in these site visits was utilized to create a vision of service NHCP would like to offer.

Assumptions

The following are assumptions made in order to complete the inpatient mental health VCI:

1. Only active duty beneficiaries will be recaptured into NHCP's inpatient mental health unit.
2. Inpatient admissions to NMCSO from MTFs geographically closer to NHCP will be considered as potential admissions to NHCP.
3. Enrollees of NHCP parent and child DMIS IDs who are admitted to civilian facilities will be considered as potential admissions to NHCP.

4. There will be no additional active duty technician billets allotted to fill a new inpatient unit's positions.
5. Admission rates upon opening mental health services at NHCP will be similar or higher than the previous four FY admission rates that were used to forecast demand. The assumption of similar rates is based on no vast advances in inpatient mental health sciences in the past five years that would decrease utilization, as well as no major DoD policy changes regarding the Involuntary Psychiatric Hospitalization Department of Defense Directive, Number 6490.1. Amplification of this directive is provided in Appendix C.
6. Staffing will be based on a six bed capacity for inpatient mental health admissions.
7. No new facility will be built for inpatient mental health services. The existing structure, the space formerly utilized for inpatient mental health, will be utilized. Upgrades will be completed to outfit the unit in order to comply with the July 2002 version of the Medical Military Facilities Design and Construction Criteria.
8. The cost to move Internal Medicine will not be figured into the analysis, but is expected to be minimal without facility modifications. It will require labor, which is a fixed cost, to move equipment.
9. There will be an increase in mental health professional visits (i.e. outpatient visits for inpatients).
10. There will be an increase in ancillary costs (i.e. inpatients will require medications and laboratory tests).

Results

Quantitative Results

Return on Investment (ROI), cumulative investment, cumulative cost avoidance or savings and cumulative net savings or loss were utilized, in addition to the qualitative findings, in determining whether to accept or reject this project.

The quantitative results included those from the Single Exponential Smoothing forecasting method and the VCI tool. The Single Exponential Smoothing method of forecasting resulted in a straight line forecast of 199 annual mental health inpatient admissions for NHCP to potentially recapture from NMCSO and 12 annual inpatient admissions from civilian hospitals. The average cost calculated per civilian hospital admission was \$3021.00 for the 66 admissions in FY 2004 and 2005. The average cost was input into the VCI tool in order to calculate a Private Sector Care cost per admission. The ambulance service cost avoidance was calculated as \$253,200.00 for 211 patients at \$1200.00 per transport. This was input into the VCI tool under Miscellaneous Benefits.

Quantitative results were a FY 2006 net investment of \$1,362,000.00, a cost avoidance of \$1,054,800.00, a net loss of \$307,200.00 and a ROI of -23%. The cumulative net investment in 2011 is \$6,823,800.00, a cost avoidance of \$6,416,100.00, a net loss of \$407,700.00 and a ROI of -6%. All financial results are fully inflated and discounted to year one dollars. See Figure 6 for the six year financial summary.

Fiscal Year	2006	2007	2008	2009	2010	2011
COST (in 000s)						
Personnel	\$ 937.5	\$ 942.1	\$ 945.3	\$ 947.3	\$ 948.0	\$ 947.5
Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Leases/Contracts	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Variable Costs (Supplies, etc.)	\$ 142.2	\$ 142.4	\$ 142.8	\$ 143.2	\$ 143.5	\$ 143.5
Equipment	\$ 32.3	\$ 3.2	\$ 3.2	\$ 3.2	\$ 3.2	\$ 3.2
Facility Mod	\$ 250.0	\$ -	\$ -	\$ -	\$ -	\$ -
Misc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BENEFIT (in 000s)						
TNEX	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ACTIVE DUTY	\$ 801.6	\$ 809.1	\$ 816.6	\$ 824.3	\$ 832.0	\$ 839.7
TFL > 65	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TPC Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other/Misc	\$ 253.2	\$ 251.6	\$ 250.0	\$ 248.1	\$ 246.1	\$ 243.9
ANNUAL RESULTS (in 000s)						
Annual Initiative Cost	\$1,362.0	\$1,087.8	\$1,091.4	\$1,093.7	\$1,094.7	\$1,094.3
Annual Net Investment	\$1,362.0	\$1,087.8	\$1,091.4	\$1,093.7	\$1,094.7	\$1,094.3
Annual Avoidance/Savings	\$1,054.8	\$1,060.7	\$1,066.6	\$1,072.4	\$1,078.0	\$1,083.7
Net Savings or (Loss)	(\$307.2)	(\$27.1)	(\$24.8)	(\$21.4)	(\$16.6)	(\$10.7)
Annual ROI	-23%	-2%	-2%	-2%	-2%	-1%
CUMULATIVE RESULTS (in 000s)						
Cumulative Investment	\$1,362.0	\$2,449.7	\$3,541.1	\$4,634.8	\$5,729.5	\$6,823.8
Cumulative Avoidance/Savings	\$1,054.8	\$2,115.5	\$3,182.0	\$4,254.4	\$5,332.5	\$6,416.1
Cumulative Net Savings or (Loss)	(\$307.2)	(\$334.3)	(\$359.0)	(\$380.4)	(\$397.0)	(\$407.7)
Cumulative ROI	-23%	-14%	-10%	-8%	-7%	-6%

Figure 6. Financial summary worksheet from the VCI tool. All financial results are fully inflated and discounted to year one dollars.

Qualitative Results

California state law sets the standard for a 1:6 nurse to patient ratio for mental health units, therefore all units were relatively the same in staffing. There was no difference in the staffing mix for each unit, except that two units, NMCSO and the San Diego Veterans Medical Center offered a recreational therapist. All the medical facilities have either a psychiatrist or psychologist for in house coverage 24 hours a day. The vision for NHCP is to have either a psychiatrist or psychologist on 24 hour call, versus in house.

The military population presents difficulty with continuity of care due to permanent change of station moves. In general, the active duty patient or provider can expect to move every three years. This is also punctuated by both parties deploying in support of various military operations anytime from three months to a year. In both the primary and specialty care setting this poses many challenges. Physical collocation, the closer the better, helps improve communication between primary and specialty care providers. It should be expected that NHCP can provide this better for its population than any other facility based on sheer proximity to its enrolled patients. NMCSO should also be able to provide this continuity of care almost as well based on organizational relationship between NHCP and NMCSO.

NHCP would be able to provide the best convenience for family members and units to visit their admitted active duty service member when compared to NMCSO. Inpatient mental health at NHCP would increase convenience specifically to those populations living on base and north east of Marine Corps Base Camp Pendleton. Many other Southern California commands that could potentially have their personnel admitted to NHCP would still have significant travel time in order to visit, albeit one hour closer than NMCSO. Patients admitted to NMCSO will have challenges receiving support from families and units that require an hour or more traveling

distance to visit. Many Camp Pendleton assigned personnel and their families do live in the San Diego Metropolitan area so the impact to this group would be negligible.

All the mental health units were in good physical condition despite the varying age of the facilities. The facilities were all constructed between the early 1960's to the late 1980's. NHCP's projected space for inpatient mental health would be the same space utilized prior to its closure. This space was renovated in recent years for the Internal Medicine Clinic and is currently in excellent condition. The current condition and the facility plans to ensure safety compliance for a behavior health unit, would make NHCP's behavioral health unit more modern and comfortable for its patient population than NMCSO.

NHCP would have the most limited in bed capacity as compared to the other facilities. It is expected that its overflow would go to NMCSO. NMCSO usually has beds available; however it may occasionally be full to capacity. NHCP's Private Sector Care costs are impacted by NMCSO's ability to have beds available for inpatient mental health admissions.

NMCSO receives a majority of mental health inpatients from the Emergency Department. The same is expected for the proposed NHCP inpatient mental health unit. Of note, the San Diego Veterans Administrative Medical Center has a psychiatric emergency department which expeditiously triaged its mental health patients, as well as limited disruptions in its core emergency department. Additionally, the VA was the only facility that offered pharmacists specializing in mental health medications and offered education on psychotropic drugs to its patients.

All the facilities have quiet/seclusion rooms; however, each reported rarely utilizing these rooms based on current practices in mental health care. NMCSO has the lowest length of stay which would likely be similar for NHCP given their population similarities. The San Diego

Veterans Administration Medical Center and Tri-City have a different population, likely older population and having varying medical coverage, thus may encounter more acute or chronically ill patients.

All facilities were similar in recreational activities available. A positive observation of services offered by NMCS D was the offering of exercise equipment on the open unit. Given the population treated in this facility this amenity was particularly innovative. NHCP has the largest outside recreational area which still exists from the previous mental health unit.

NHCP could provide a superb environment for its mental health inpatients based on the newness of the unit and opportunity to attain and incorporate the ideas from the toured facilities. The role of a recreational technician could be incorporated into any inpatient mental health staff member with supplementary training. It is projected that NHCP could provide superb patient care surroundings when compared to NMCS D; however, the actual quality of care and the resultant milieu cannot be entirely understood prior to actually providing inpatient care.

Discussion

The following section discusses the specific questions posed in the Resourcing Decision Model for military hospitals:

Does the proposal make good business sense?

The financial results showed that this proposal did not make good business sense. However, some changes in population focus may make considerable improvements to the financial impact. For example, offering inpatient mental health services to other beneficiaries on a space available basis would financially offset the cost. This would be accomplished by avoiding the cost for network care, as well as decreasing the direct care fixed costs from offering a low volume service. Additionally, the DoD is transitioning to the PPS in order to allocate each

MTF's budget. Given this future of MTF financial resourcing, each patient will represent monies added to or subtracted from NHCP's annual budget.

Third Party Claims (TPC) were evaluated as a revenue source to understand the impact it could have on financing the inpatient mental health program. The minimal amount of patients admitted to NHCP with other health insurance (approximately one percent of all admissions) and the amount of actual funds recouped through TPC (approximately 50 percent of possible collections) will have a negligible impact on the financing of inpatient mental health. TPC is an income source that cannot be counted on due to the cumbersome approach of each MTF interacting with various insurance agencies for reimbursement. The ability to effectively collect TPCs may have more impact if the Department of the Navy (or DoD) claims were collectively submitted to various agencies, showing the true size of the debt owed by these agencies. Furthermore, it cannot be assumed that this population will be recaptured since their admissions to NHCP would be strictly voluntary. Table 8 is a summary of TPC for FYs 2004 and 2005.

Table 8

Inpatient Third Party Claims at Naval Hospital Camp Pendleton

	FY 2004	FY 2005
Total inpatient discharges	4289	4120
Total number of claims	50	48
Total charged	\$375,503	\$355,003
Adjustments/Refunds	\$161,395	\$125,165
Total collected to date	\$190,789	\$177,154
Total uncollected to date	\$23,319	\$52,684

Note: Data current as of February 1st, 2006.

To understand the rationale for the expected minimal patient volume of non-active duty patients, current law is reviewed regarding the non-voluntary admission of mental health patients. The Lanterman, Petris, Short Act was enacted in 1968. The intent of this law was to prevent individuals from being admitted to mental institutions against their will. The law allows patients to be admitted against their will for a maximum of 72 hours at which time a court hears the patient and decides whether the individual is capable of caring for his or herself. If the patient can prove he or she is capable of finding food and shelter and denies intent to harm themselves or others, then he or she will be released. For a hospital, such as NHCP, to avoid the above legal proceedings, a policy of admitting exclusively voluntary non-active duty eligible beneficiaries would be adhered to. Because of this policy it is difficult to estimate the number non-active duty admissions.

Does it contribute to readiness?

With no predetermined survey of readiness standards or comparison populations to evaluate, an adequate assessment of readiness could not be completed. As such this project did not attempt to address personnel readiness. None-the-less, some discussion can be provided on the potential impact mental health inpatient services could offer to NHCP.

Offering inpatient mental health at NHCP could hypothetically contribute to readiness by offering intense inpatient services to individuals with depression, anxiety or PTSD and providing them the knowledge and skills to manage their mental health concerns before severe mental health problems (i.e. suicide) occur.

Readiness could be viewed from the perspective of NHCP's ability to respond to terrorist or natural disasters. As learned from past community emergencies, numerous psychiatric emergencies can result. Examples of disasters which profoundly impacted the mental health of communities are the sarin attack in the Tokyo subway system in 1995 or the more recent natural disaster of Hurricane Katrina. Having inpatient mental health capability available at NHCP can make the hospital more capable of handling the potential influx of psychiatric casualties during terrorist and natural disasters.

Inpatient mental health could provide the NHCP Family Practice Residents with more experience in severe mental health illnesses. This experience may help these providers assess and treat mental health issues encountered in operational and combat settings, where they may be the only provider available until the patient can be transferred to tertiary care. In this manner, inpatient mental health at NHCP may contribute to improved readiness.

Is it the right thing for the patient?

It is important to define who the patient is when answering Hart and Connor's question, "Is it the right thing for the patient?" Leaders need to address whether "the patient" is the overall military population or each individual. Decisions must be made as to whether the focus of resources will be on providing care for the numerous patients who are returning from combat with PTSD, depression and anxiety disorders or whether to focus resources on the fewer individuals who require inpatient care for more severe mental health needs. Ultimately DoD Medicine exists for reasons beyond the individual patient. It exists to support DoD missions. The more healthy the retainable population, the more capable the fighting force.

When deciding to utilize resources on a project, leaders must also consider the opportunity forgone. Offering inpatient mental health services results in forgoing other health services to patients. Given the Hoge et al (2002) findings on the 50 percent likelihood of retaining these personnel, resources may be better utilized on the retainable service members. Additionally, Captain Freda Vaughan presented statistics showing only 15 percent of all NCHP mental health admissions for FY 2005 were retained on active duty (F.K. Vaughan, MSMO Quarterly Meeting, January 23rd, 2006).

In the previously mentioned Druss, Miller, Pincus, and Shih (2004) study, in which HEDIS measures were utilized to determine whether a parallel association exists between volume of mental health delivery and the quality of mental health care, their findings indicated providers of lower inpatient and outpatient volumes of care consistently and substantially performed poorly on the HEDIS mental health performance measures. As such, if NHCP were to have an inpatient mental health unit, current demand for services, as derived from FYs 2002, 2003, 2004 and 2005 admissions to NMCSO, would be low as the data indicated from the M2

datamart. These findings and the expected low volume of mental health inpatients at NHCP may indicate NMCS D's mental health units could deliver higher quality care.

Limitations

This study has three basic limitations. These limitations are: 1) utilizing a VCI tool for which military salaries could not be used, 2) the exclusion of the student population on Marine Corps Base Camp Pendleton and 3) the potential for over projection of future inpatient mental health demand.

First, the VCI tool offered no place to input military salaries and due to the mission training requirement of active duty personnel, the cost of such personnel can be high. Training time detracts from productivity, and therefore can cause the cost of business to increase.

Second, at the time of the data collection it was not known how to identify the student population on Marine Corps Base Camp Pendleton. That is now known, but time limitations did not allow for a repeat of the data pull and demand analysis.

Third, the Single Exponential Smoothing method, while producing a straight line forecast of 199 recaptured active duty patients from NMCS D, shows an increase in patient admissions that exceeds admissions from any of the previous four years. There is no existing indication that demand for inpatient mental health service will increase and sustain that increase over the next six year.

Given these limitations, future analysis should include utilizing a VCI model that accepts military salary data, as well as data collections which includes the student population.

Additionally, is not clearly understood how much inpatient mental health services are desired by the population served. Given this, conducting a patient satisfaction survey of NHCP mental health patients admitted to NMCS D to discern the relevance of being near command leadership

and family could prove informative. Also, surveying the leadership on Marine Corps Base Camp Pendleton could discern the desire of the unit leadership to have this service offered at NHCP.

Recommendations and Conclusions

Based on the analysis presented in this study, it is recommended that NHCP not offer inpatient mental health at this time. The financial results should be taken with strong consideration that NHCP does not pay Private Sector Care costs to NMCSO currently. Therefore the cost avoidance represented for the forecasted 199 NMCSO mental health inpatients is not a true cost avoidance as it would be when compared to the cost of paying for civilian care. The Private Sector Care costs must be used in the VCI tool to provide some method of assessing the cost of care.

The Single Exponential Smoothing method shows an increase in patient admissions, exceeding admissions from any of the previous four years. Financial assumptions in the VCI tool were based on this forecasted amount, as well as ambulance service cost avoidance. Decreases in the ambulance service cost avoidance amount can have a profound negative impact on the cumulative cost avoidance, net savings and ROI.

The best use of resources would be continued referral of NHCP's patients to inpatient mental health services at NMCSO. While Hoge et al. (2004) findings showed an increase in depression, anxiety and PTSD among the military population returning from combat operations, the mental health providers from NHCP and NMCSO believe these diagnoses can be treated on an outpatient basis. Dr. Ronald Burbank, the staff psychiatrist at NHCP, felt it would be more beneficial to utilize the resources in targeting treatment for patients with PTSD. Additionally, he noted that the frequency of diagnosis for PTSD at NHCP's Mental Health Clinic has increased from 73 active duty members in 2002 to 2,448 as of July 2005 (R. B. Burbank, personal

conversation, August 28th, 2005). It is recommended that resources be focused in the outpatient mental health service in order to focus on the active duty population requiring care for depression, anxiety and PTSD to keep this highly retainable fighting force ready for future DoD missions.

Although this study's results indicate this venture would incur a financial loss, not all decisions by providers of health services should be made on financial feasibility. The provision or withholding of health care services must be considered for their beneficial or detrimental impact to the community served. The mental health of our troops has been a key concern for leaders during all of the wars in which the United States has participated. While it may not make financial sense to offer inpatient services indefinitely, it does make sound sense to offer this service to our patient population during wartime. As such, offering inpatient mental health for the duration of the GWOT is an alternative consideration for NHCP leaders. Incurring a financial loss in the short term, but doing the right thing for our Marines and Sailors may result in immeasurable gains both professionally and personally for our all of our beneficiaries.

Appendix A

Relevant Venture Capital Initiative Worksheets with Pertinent Data

1. Initiative Description:
Assess whether or not to reinstate inpatient mental health services at NHCP given the inception of increased combat exposure to armed forces during the GWOT. To complete this study, both quantitative and qualitative information were employed in a Business Case Analysis (BCA). This study will assess the financial cost of staffing an inpatient mental health unit, the required facility upgrades and equipment, the projected utilization of mental health inpatient services, as well as address the quality of care concerns regarding services that would be rendered by an NHCP inpatient mental health unit. Return on Investment (ROI), cumulative investment, cumulative cost avoidance/savings and cumulative net savings/loss were utilized, in addition to the qualitative findings, in determining whether to accept or reject this project.
2. Has this initiative been reviewed by your Service?:
No.
3. Background:
Inpatient Mental Health Services were discontinued at Naval Hospital Camp Pendleton in 1st Quarter, FY 2000. Staffing shortages and low inpatient demand were the impetus for the closure. Staffing ratios and credentialing standards were less than present day requirements. This resulted in the opportunity to consolidate duplicated services offered by both NHCP and NMCSO. Since September 11th, 2001, the Armed Forces have been called on to conduct warfare operations in Afghanistan and Iraq. The Global War on Terrorism (GWOT) has changed the environment in which military personnel operate. This VCI is part of a Business Case Analysis to ensure NHCP is optimizing its resources, while fulfilling its mission to care for active duty personnel, such as those who may be suffering from depression, anxiety and Post Traumatic Stress Disorder (PTSD) as a result of the current GWOT environment.
4. Initiative Goals & Objectives:
1) Assess efficient use of mental health resources. 2) Assess the ability to provide mental health care at NHCP.
5. Key Assumptions:
1. Only active duty beneficiaries will be recaptured into NHCP's inpatient mental health unit. 2. Inpatient admissions to NMCSO from MTFs geographically closer to NHCP will be considered as potential admissions to NHCP. 3. Enrollees of NHCP parent and child DMIS IDs who are admitted to civilian facilities will be considered as potential admissions to NHCP. 4. There will be no additional active duty technician billets allotted to fill a new inpatient unit's positions. 5. Admission rates upon opening mental health services at NHCP will be similar or higher than the previous four FY admission rates that were used to forecast demand. The assumption of similar rates is based on no vast advances in inpatient mental health sciences in the past five years that would decrease utilization, as well as no major DoD policy changes regarding the Involuntary Psychiatric Hospitalization Department of Defense Directive, Number 6490.1. Amplification of this directive is provided in Appendix C. 6. Staffing will be based on a six bed capacity for inpatient mental health admissions. 7. No new facility will be built for inpatient mental health services. The existing structure, the space formerly utilized for inpatient mental health, will be used. 8. There will be an increase in mental health professional visits (i.e. outpatient visits for inpatients). 9. There will be an increase in mental health professional visits (i.e. outpatient visits for inpatients). 10. There will be an increase in mental health professional visits (i.e. outpatient visits for inpatients).
6. Non-Financial Benefits: [Patient or provider satisfaction, compliance with regulations, improved]
1) Local admissions will make it easier for families to visit the inpatient. 2) Local admissions will make it easier for command to visit the inpatient. 3) Continuity of care will improve due to increased communication and coordination between the Primary Care
7. Implementation Plan & Benchmark Events: [Indicate key milestones, including pre and post]
1) Move Internal Medicine Outpatient Clinic to alternate location. 2) Renovate 3 Center (Current location for Internal Medicine) for inpatient mental health utilization. 3) Hire staffing for unit. 4) Develop Standard Operating Procedures for unit. Ensure JCAHO standards are met for operating unit.
8. Alternatives Evaluated: [Specify impact if initiative is not funded and/or alternatives to this initiative.]
1) Status quo - continue to refer mental health patients to NMCSO.

Salary Table 2005-GS

PROVIDERS

Contract Providers				Enter the # of Contract Provider FTEs for Each Year					
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Psychiatrist	\$ 228,443	\$ -	\$ 228,443	1	1	1	1	1	1
Nurse (Mental Health)	\$ 56,363	\$ -	\$ 56,363	3	3	3	3	3	3
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Support Staff GS Cost										Enter the # of GS Support Staff FTEs for Each Year					
Description	Locale	Locality Rate	GS	Site p	Salary + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6		
								4	4	4	4	4	4	4	
Tech (Mental Health)	SD	▼ 1.68%	6	▼ 5	▼ \$	\$ 45,858	\$ -	\$ 45,858	4	4	4	4	4	4	
	SD	▼ 1.68%	5	▼ 5	▼ \$	\$ 41,142	\$ -	\$ 41,142							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	SD	▼ 1.68%	8	▼ 5	▼ \$	\$ 56,433	\$ -	\$ 56,433							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
	RUS	▼ 1.72%	8	▼ 5	▼ \$	\$ 53,575	\$ -	\$ 53,575							
Total GS SUPPORT STAFF Cost per Year								\$ 183,433.70	\$ 189,670.45	\$ 195,907.19	\$ 202,143.94	\$ 208,380.68	\$ 214,617.43		

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year					
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Tech (Mental Health)	\$ 27,387	\$ -	\$ 27,387	5	5	5	5	5	5
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GS Personnel		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number of Provider FTEs		3	3	3	3	3	3
GS Cost of Providers		\$ 219,604	\$ 227,071	\$ 234,537	\$ 242,004	\$ 249,470	\$ 256,937
Number of Support Staff FTEs		4	4	4	4	4	4
GS Cost of Support Staff		\$ 183,434	\$ 189,670	\$ 195,907	\$ 202,144	\$ 208,381	\$ 214,617
Total GS Cost		\$ 403,038	\$ 416,741	\$ 430,444	\$ 444,148	\$ 457,851	\$ 471,554
Contract Personnel							
Number of Provider FTEs		4	4	4	4	4	4
Contract Cost of Providers		\$ 397,532	\$ 415,288	\$ 433,045	\$ 450,801	\$ 468,558	\$ 486,314
Number of Support Staff FTEs		5	5	5	5	5	5
Contract Cost of Support Staff		\$ 136,935	\$ 143,051	\$ 149,168	\$ 155,284	\$ 161,401	\$ 167,517
Total Contract Cost		\$ 534,467	\$ 558,340	\$ 582,213	\$ 606,086	\$ 629,958	\$ 653,831
Total Personnel Cost		\$ 937,505	\$ 975,081	\$ 1,012,657	\$ 1,050,233	\$ 1,087,809	\$ 1,125,386

Investment - Travel

Instructions		Change in Travel Costs					
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Govt charge per mile	\$0.365						
Number of Personnel							
Round Trip Miles per Person							
Trips per Year per Person							
Total Miles Per Year		0	0	0	0	0	0
Reimbursement Per Mile		\$0.365	\$0.373	\$0.380	\$0.388	\$0.396	\$0.403
Per Diem per Trip							
Total Change in Transportation Cost		\$0	\$0	\$0	\$0	\$0	\$0
Assumptions / Comments / Data Sources / POC: There will be no utilization of personnel to conduct Technical Assist Visits to Child Commands of NHCP.							

Instructions

Change in Variable Costs

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inpatient Variable Costs						
Change in Inpatient Workload	211	211	211	211	211	211
Avg. Variable Cost per Admission	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total Inpatient Variable Costs	\$0	\$0	\$0	\$0	\$0	\$0
Outpatient Variable Costs						
Change in Outpatient Workload	1198	1198	1198	1198	1198	1198
Avg. Variable Cost per Visit	\$103.17	\$106.99	\$111.01	\$115.24	\$119.47	\$123.70
Total Outpatient Variable Costs	\$123,598	\$128,171	\$132,991	\$138,059	\$143,126	\$148,194
Same Day Surgery						
Change in SDS Workload	0	0	0	0	0	0
Avg. Variable Cost per SDS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total SDS Variable Costs	\$0	\$0	\$0	\$0	\$0	\$0
Ancillary Services						
Change in Laboratory Services	1477	1477	1477	1477	1477	1477
Avg. Variable Cost per Test	\$11.00	\$11.41	\$11.84	\$12.29	\$12.74	\$13.19
Total Laboratory Variable Costs	\$16,247	\$16,848	\$17,482	\$18,148	\$18,814	\$19,480
Change in Radiology Services	0	0	0	0	0	0
Avg. Variable Cost per Rad Procedure	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total Radiology Variable Costs	\$0	\$0	\$0	\$0	\$0	\$0
Change in Prescriptions	211	211	211	211	211	211
Avg. Variable Cost per Prescription	\$11.00	\$11.41	\$11.84	\$12.29	\$12.74	\$13.19
Total Pharmaceutical Variable Costs	\$2,321	\$2,407	\$2,497	\$2,593	\$2,688	\$2,783
Total Ancillary Variable Costs	\$18,568	\$19,255	\$19,979	\$20,740	\$21,502	\$22,263
Total Variable Cost Estimate	\$142,166	\$147,426	\$152,970	\$158,799	\$164,628	\$170,457
Personnel Costs Already Accounted For	\$937,505	\$975,081	\$1,012,657	\$1,050,233	\$1,087,809	\$1,125,386
Net Change in Variable Cost	\$142,166	\$147,426	\$152,970	\$158,799	\$164,628	\$170,457

Instructions**Change in Capital Costs - Facility Mods (Fiscal Analysis)**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Facility						
Backlogged/Urgent RPM						
Facilities Renovation	\$250,000					
New Facilities/Site Prep Cost						
Other						
Total Facility	\$250,000	\$0	\$0	\$0	\$0	\$0
Other/Misc						
Write-in as needed						
Write-in as needed						
Write-in as needed						
Total Other/Misc	\$0	\$0	\$0	\$0	\$0	\$0
Capital Investment Totals	\$250,000	\$0	\$0	\$0	\$0	\$0

Please indicate you answer to the following questions	YES	NO
Equipment costs are related to Patient Safety and Near Miss issues		X
Investment or funding request is up-front, one time start-up money needed to fund your project.	X	
Space available in existing Bldg	X	
Facilities Manager (FM) has reviewed project to identify maintenance/construction req.	X	
Cost is feasible.	X	
Maintenance or construction has re-occurring maintenance cost to facility.	X	
Re-occurring maintenance cost to facility is appropriate.	X	
Work Order has been generated for project.		X
Work to be accomplished is targeted to be completed in timely manner.	X	
Accomplishment priority is appropriate.	NA	NA
FM has signed-off paperwork ensuring identification.	NA	NA

Assumptions / Comments / Data Sources / POC:

See Figure 4, titled Estimated cost of facility upgrades to institute inpatient mental health at NHCP (imbedded in Graduate Management Project) for a detailed list of line items. NHCP Facilities Department estimated between \$200,000 and \$300,000 in costs to renovate the Internal Medicine Unit into an Inpatient Mental Health Unit with six beds capacity. The median estimate of \$250,000 was used for the Change in Capital Costs - Facility Renovation above.

Instructions		Miscellaneous Costs					
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Description							
Variable Costs							
Write-in as needed							
Write-in as needed							
Write-in as needed							
Write-in as needed							
Write-in as needed							
Write-in as needed							
Miscellaneous Item Totals		\$0	\$0	\$0	\$0	\$0	\$0

Assumptions / Comments / Data Sources / POC; Not applicable.

Instructions

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inpatient							
ADMISSIONS		211	211	211	211	211	211
Avg. Institutional CMAC or PSC Inpatient Cost		\$3,021	\$3,156	\$3,297	\$3,444	\$3,598	\$3,759
Inpatient Institutional Savings		\$637,431	\$665,903	\$695,647	\$726,719	\$759,179	\$793,089
Avg. Professional Fee Per Admission		\$105	\$110	\$115	\$120	\$125	\$131
Inpatient Professional Savings		\$22,155	\$23,145	\$24,178	\$25,258	\$26,387	\$27,565
Total Inpatient Savings		\$659,586	\$689,048	\$719,825	\$751,977	\$785,565	\$820,654
Outpatient							
OUTPATIENT VISITS		1,198	1,198	1,198	1,198	1,198	1,198
Avg. Professional CMAC or Outpatient PSC Cost		\$103	\$108	\$112	\$117	\$123	\$128
Total Outpatient Savings		\$123,443	\$128,957	\$134,717	\$140,735	\$147,021	\$153,588
Same Day Surgery							
SDSs		-	-	-	-	-	-
Avg. Institutional CMAC or PSC SDS Cost							
SDS Institutional Savings		\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional Fee Per SDS							
SDS Professional Savings		\$0					
Total SDS Savings		\$0	\$0	\$0	\$0	\$0	\$0
Ancillary Services							
LABORATORY SERVICES		1,477	1,477	1,477	1,477	1,477	1,477
Avg. Cost per Laboratory Test		\$11	\$11	\$12	\$13	\$13	\$14
Lab Savings		\$16,247	\$16,973	\$17,731	\$18,523	\$19,350	\$20,214
RADIOLOGY SERVICES		-	-	-	-	-	-
Avg. Cost per Radiology Procedure		\$0	\$0	\$0	\$0	\$0	\$0
Radiology Savings		\$0	\$0	\$0	\$0	\$0	\$0
PRESCRIPTIONS		211	211	211	211	211	211
Avg. Cost per Prescription		\$11	\$11	\$12	\$13	\$13	\$14
Prescription Savings		\$2,321	\$2,425	\$2,533	\$2,646	\$2,764	\$2,888
Total Ancillary Savings		\$18,568	\$19,397	\$20,264	\$21,169	\$22,114	\$23,102
Total		\$801,597	\$837,402	\$874,806	\$913,881	\$954,701	\$997,344
TNEX							
AD		\$801,597	\$837,402	\$874,806	\$913,881	\$954,701	\$997,344
TFL		\$0	\$0	\$0	\$0	\$0	\$0
Realized Benefit		\$801,597	\$837,402	\$874,806	\$913,881	\$954,701	\$997,344

Benefit - Workload

Assumptions / Comments / Data Sources / POC:

The Single Exponential Smoothing method for forecasting was employed utilizing the Crystal Ball Predictor software. This method was chosen based on its appropriateness for volatile data that shows no trends or seasonality, such as the NMCSD active duty admission data and civilian hospital active duty admission data collected. The total civilian hospital care cost for FYs 2004 and 2005, \$199,383.00, was divided by the total FYs 2004 and 2005 admissions of 66, for an average cost per admission. This average cost was input into the VCI tool in order to calculate a Private Sector Care cost per admission. The annual forecasted total of active duty admissions (199) to NMCSD was added to the annual forecasted total civilian hospital admissions (12) for a total of potential active duty admissions to be employed in the VCI tool.

Weighted Average Calculator			
Workload description (i.e. DRG, CPT, ICD-9...)	CPT Code 90818	Encounters	PSC Cost
	CPT Code 90819	459	\$100.77
		459	\$105.56
Weighted Avg Cost			\$103.17

Instructions						
Population Break-out	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
TRICARE Underwritten Population	0%	0%	0%	0%	0%	0%
ADFM	0%	0%	0%	0%	0%	0%
Retiree/Other	0%	0%	0%	0%	0%	0%
AD	100%	100%	100%	100%	100%	100%
TFL	0%	0%	0%	0%	0%	0%
	100%	100%	100%	100%	100%	100%

Assumptions / Comments / Data Sources / POC: Only active duty are included in this study.

Instructions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inpatient						
ADMISSIONS	-	-	-	-	-	-
Avg. Institutional CMAC or PSC Inpatient Cost	\$0	\$0	\$0	\$0	\$0	\$0
Inpatient Institutional Savings	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional Fee Per Admission	\$105	\$112	\$120	\$128	\$136	\$145
Inpatient Professional Savings	\$0	\$0	\$0	\$0	\$0	\$0
TNEX Inpt Savings	\$0	\$0	\$0	\$0	\$0	\$0
Outpatient						
OUTPATIENT VISITS	-	-	-	-	-	-
Avg. Professional CMAC or Outpatient PSC Cost	\$103	\$110	\$117	\$125	\$134	\$142
TNEX Outpt Savings	\$0	\$0	\$0	\$0	\$0	\$0
Same Day Surgery						
SDSs	-	-	-	-	-	-
Avg. Institutional CMAC or PSC SDS Cost	\$0	\$0	\$0	\$0	\$0	\$0
SDS Institutional Savings	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional Fee Per SDS	\$0	\$0	\$0	\$0	\$0	\$0
SDS Professional Savings	\$0	\$0	\$0	\$0	\$0	\$0
TNEX SDS Savings	\$0	\$0	\$0	\$0	\$0	\$0
Ancillary Services						
LABORATORY SERVICES	-	-	-	-	-	-
Avg. Cost per Laboratory Test	\$11	\$12	\$13	\$13	\$14	\$15
Lab Savings	\$0	\$0	\$0	\$0	\$0	\$0
RADIOLOGY SERVICES	-	-	-	-	-	-
Avg. Cost per Radiology Procedure	\$0	\$0	\$0	\$0	\$0	\$0
Radiology Savings	\$0	\$0	\$0	\$0	\$0	\$0
PRESCRIPTIONS	-	-	-	-	-	-
Avg. Cost per Prescription	\$11	\$12	\$13	\$13	\$14	\$15
Prescription Savings	\$0	\$0	\$0	\$0	\$0	\$0
TNEX Ancillary Savings	\$0	\$0	\$0	\$0	\$0	\$0
TNEX Total Savings	\$0	\$0	\$0	\$0	\$0	\$0

Assumptions / Comments / Data Sources / POC: Not applicable.

Instructions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inpatient						
ADMISSIONS	211	211	211	211	211	211
Avg. Institutional CMAC or PSC Inpatient Cost	\$3,021	\$3,156	\$3,297	\$3,444	\$3,598	\$3,759
Inpatient Institutional Savings	\$637,431	\$665,903	\$695,647	\$726,719	\$759,179	\$793,089
Avg. Professional Fee Per Admission	\$105	\$110	\$115	\$120	\$125	\$131
Inpatient Professional Savings	\$22,155	\$23,145	\$24,178	\$25,258	\$26,387	\$27,565
AD Inpt Savings	\$659,586	\$689,048	\$719,825	\$751,977	\$785,565	\$820,654
Outpatient						
OUTPATIENT VISITS	1,198	1,198	1,198	1,198	1,198	1,198
Avg. Professional CMAC or Outpatient PSC Cost	\$103	\$108	\$112	\$117	\$123	\$128
AD Outpt Savings	\$123,443	\$128,957	\$134,717	\$140,735	\$147,021	\$153,588
Same Day Surgery						
SDSs	-	-	-	-	-	-
Avg. Institutional CMAC or PSC SDS Cost	\$0	\$0	\$0	\$0	\$0	\$0
SDS Institutional Savings	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional Fee Per SDS	\$0	\$0	\$0	\$0	\$0	\$0
SDS Professional Savings	\$0	\$0	\$0	\$0	\$0	\$0
AD SDS Savings	\$0	\$0	\$0	\$0	\$0	\$0
Ancillary Services						
LABORATORY SERVICES	1,477	1,477	1,477	1,477	1,477	1,477
Avg. Cost per Laboratory Test	\$11	\$11	\$12	\$13	\$13	\$14
Lab Savings	\$16,247	\$16,973	\$17,731	\$18,523	\$19,350	\$20,214
RADIOLOGY SERVICES	-	-	-	-	-	-
Avg. Cost per Radiology Procedure	\$0	\$0	\$0	\$0	\$0	\$0
Radiology Savings	\$0	\$0	\$0	\$0	\$0	\$0
PRESCRIPTIONS	211	211	211	211	211	211
Avg. Cost per Prescription	\$11	\$11	\$12	\$13	\$13	\$14
Prescription Savings	\$2,321	\$2,425	\$2,533	\$2,646	\$2,764	\$2,888
AD Ancillary Savings	\$18,568	\$19,397	\$20,264	\$21,169	\$22,114	\$23,102
AD Total Savings	\$801,597	\$837,402	\$874,806	\$913,881	\$954,701	\$997,344

Instructions

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inpatient						
ADMISSIONS	-	-	-	-	-	-
Avg. Institutional CMAC or PSC Inpatient Cost	\$0	\$0	\$0	\$0	\$0	\$0
Inpatient Institutional Savings	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional Fee Per Admission	\$105	\$107	\$109	\$111	\$114	\$116
Inpatient Professional Savings	\$0	\$0	\$0	\$0	\$0	\$0
TFL Inpt Savings	\$0	\$0	\$0	\$0	\$0	\$0
Outpatient						
OUTPATIENT VISITS	-	-	-	-	-	-
Avg. Professional CMAC or Outpatient PSC Cost	\$101	\$103	\$105	\$107	\$110	\$112
TFL Outpt Savings	\$0	\$0	\$0	\$0	\$0	\$0
Same Day Surgery						
SDSs	-	-	-	-	-	-
Avg. Institutional CMAC or PSC SDS Cost	\$0	\$0	\$0	\$0	\$0	\$0
SDS Institutional Savings	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional Fee Per SDS	\$0	\$0	\$0	\$0	\$0	\$0
SDS Professional Savings	\$0	\$0	\$0	\$0	\$0	\$0
TFL SDS Savings	\$0	\$0	\$0	\$0	\$0	\$0
Ancillary Services						
LABORATORY SERVICES	-	-	-	-	-	-
Avg. Cost per Laboratory Test	\$11	\$11	\$11	\$12	\$12	\$12
Lab Savings	\$0	\$0	\$0	\$0	\$0	\$0
RADIOLOGY SERVICES	-	-	-	-	-	-
Avg. Cost per Radiology Procedure	\$0	\$0	\$0	\$0	\$0	\$0
Radiology Savings	\$0	\$0	\$0	\$0	\$0	\$0
PRESCRIPTIONS	-	-	-	-	-	-
Avg. Cost per Prescription	\$16	\$16	\$17	\$17	\$17	\$18
Prescription Savings	\$0	\$0	\$0	\$0	\$0	\$0
TFL Ancillary Savings	\$0	\$0	\$0	\$0	\$0	\$0
TFL Total Savings	\$0	\$0	\$0	\$0	\$0	\$0

Benefit- TPC

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Inpatient						
ADMISSIONS w/OHI	-	-	-	-	-	-
Avg. Institutional TPC Rate		\$0	\$0	\$0	\$0	\$0
Inpatient Institutional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional TPC Rate		\$0	\$0	\$0	\$0	\$0
Inpatient Professional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
OHI Inpt Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Outpatient						
OUTPATIENT VISITS w/OHI	-	-	-	-	-	-
Avg. Outpatient TPC Rate	\$101	\$104	\$107	\$111	\$114	\$118
OHI Outpt Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Same Day Surgery						
SDSs w/OHI	-	-	-	-	-	-
Avg. Institutional SDS TPC Rate	\$0	\$0	\$0	\$0	\$0	\$0
SDS Institutional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Avg. Professional SDS TPC Rate	\$0	\$0	\$0	\$0	\$0	\$0
SDS Professional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
OHI SDS Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Ancillary Services						
LABORATORY SERVICES w/OHI	-	-	-	-	-	-
Avg. TPC per Laboratory Test	\$11	\$11	\$12	\$12	\$12	\$13
Lab Revenue	\$0	\$0	\$0	\$0	\$0	\$0
RADIOLOGY SERVICES w/OHI	-	-	-	-	-	-
Avg. TPC per Radiology Procedure	\$0	\$0	\$0	\$0	\$0	\$0
Radiology Revenue	\$0	\$0	\$0	\$0	\$0	\$0
PRESCRIPTIONS w/OHI	-	-	-	-	-	-
Avg. TPC per Prescription	\$14	\$14	\$15	\$15	\$16	\$16
Prescription Revenue	\$0	\$0	\$0	\$0	\$0	\$0
OHI Ancillary Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Total OHI Revenue	\$0	\$0	\$0	\$0	\$0	\$0

Instructions

Miscellaneous Benefits

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Description						
Reduced ambulance costs to NMCSD	\$253,200	\$253,200	\$253,200	\$253,200	\$253,200	\$253,200
Write-in Miscellaneous Ben #2						
Write-in Miscellaneous Ben #3						
Write-in Miscellaneous Ben #4						
Write-in Miscellaneous Ben #5						
Write-in Miscellaneous Ben #6						
Write-in Miscellaneous Ben #7						
Miscellaneous Ben Totals	\$253,200	\$260,374	\$267,757	\$275,071	\$282,386	\$289,700

Assumptions / Comments / Data Sources / POC:

Estimated average ambulance cost to transfer patients from NHCP to NMCSD is \$1200.00. Estimation provided by NHCP Supplemental Care Office. The cost of 211 patients (all patients under NHCP's parent and child DMIS ID's, therefore fiscally responsible) multiplied by the average ambulance cost from NHCP to NMCSD +

Site Name:	Naval Hospital Camp Pendleton
Initiative Name:	Evaluation of Inpatient Mental Health at NHC

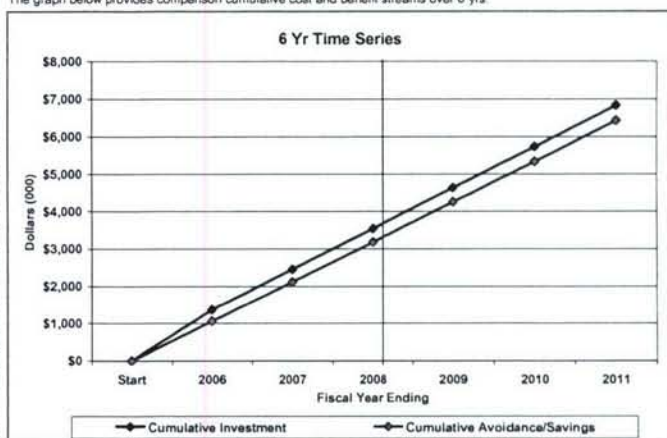
All financial results are fully inflated and discounted to year one dollars.

Fiscal Year	2006	2007	2008	2009	2010	2011
COST (in 000s)						
Personnel	\$ 937.5	\$ 942.1	\$ 945.3	\$ 947.3	\$ 948.0	\$ 947.5
Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Leases/Contracts	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Variable Costs (Supplies, etc.)	\$ 142.2	\$ 142.4	\$ 142.8	\$ 143.2	\$ 143.5	\$ 143.5
Equipment	\$ 32.3	\$ 3.2	\$ 3.2	\$ 3.2	\$ 3.2	\$ 3.2
Facility Mod	\$ 250.0	\$ -	\$ -	\$ -	\$ -	\$ -
Misc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BENEFIT (in 000s)						
TNEX	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AD	\$ 801.6	\$ 809.1	\$ 816.6	\$ 824.3	\$ 832.0	\$ 839.7
TFL > 65	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TPC Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other/Misc	\$ 253.2	\$ 251.6	\$ 250.0	\$ 248.1	\$ 246.1	\$ 243.9
ANNUAL RESULTS (in 000s)						
Annual Initiative Cost	\$1,362.0	\$1,087.8	\$1,091.4	\$1,093.7	\$1,094.7	\$1,094.3
Annual Net Investment	\$1,362.0	\$1,087.8	\$1,091.4	\$1,093.7	\$1,094.7	\$1,094.3
Annual Avoidance/Savings	\$1,054.8	\$1,060.7	\$1,066.6	\$1,072.4	\$1,078.0	\$1,083.7
Net Savings or (Loss)	(\$307.2)	(\$27.1)	(\$24.8)	(\$21.4)	(\$16.6)	(\$10.7)
Annual ROI	-23%	-2%	-2%	-2%	-2%	-1%
CUMULATIVE RESULTS (in 000s)						
Cumulative Investment	\$1,362.0	\$2,449.7	\$3,541.1	\$4,634.8	\$5,729.5	\$6,823.8
Cumulative Avoidance/Savings	\$1,054.8	\$2,115.5	\$3,182.0	\$4,254.4	\$5,332.5	\$6,416.1
Cumulative Net Savings or (Loss)	(\$307.2)	(\$334.3)	(\$359.0)	(\$380.4)	(\$397.0)	(\$407.7)
Cumulative ROI	-23%	-14%	-10%	-8%	-7%	-6%

Fiscal Year	Workload					
	2006	2007	2008	2009	2010	2011
ADMISSIONS	211	211	211	211	211	211
OUTPATIENT VISITS	1,198	1,198	1,198	1,198	1,198	1,198
SDSs	-	-	-	-	-	-
LABORATORY SERVICES	1,477	1,477	1,477	1,477	1,477	1,477
RADIOLOGY SERVICES	-	-	-	-	-	-
PRESCRIPTIONS	211	211	211	211	211	211

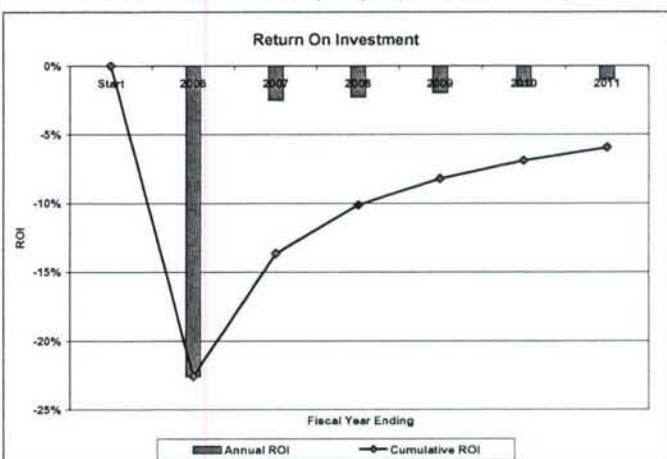
Notes:

The graph below provides comparison cumulative cost and benefit streams over 6 yrs.

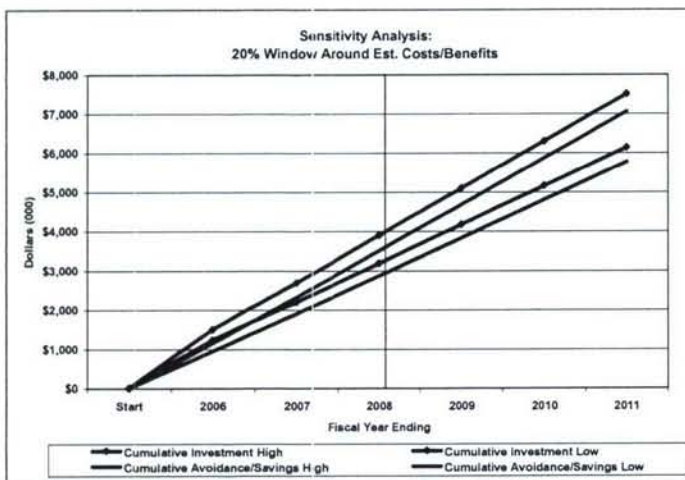


Required 36 Month VC Investment (\$000)	\$3,541.1
Total Investment \$6823.8	Venture Capital Requirement \$6823.8
Net (after investment) Return on 36 month investment (\$000)	(\$359.0)

The graph below provides the ROI of each year's cost and benefit streams as well as the cumulative ROI. The red marker identifies whether the initiative breaks even prior to year 3 (i.e. B-E when above the axis).



The graph below illustrates the likelihood that the initiative will break-even within 3 yrs. The larger the overlap between the est. ranges (in yr 3), the less likely the initiative is to break-even.



The graph below appears after the BCT has been run through the TRO Analysis Pak. It provides insight into the relative significance of BCT inputs for this initiative. The largest slice is the biggest ROI driver.

The Sensitivity Analysis Component Graph appears here after this BCT is run through the TRO Analysis Pak.

Instructions		Year 1				Year 2			
		1	2	3	4	1	2	3	4
Total Funding Requirement		340.5	340.5	340.5	340.5	271.9	271.9	271.9	271.9
VC Funding Requirement		340.5	340.5	340.5	340.5	271.9	271.9	271.9	271.9
VC Funding Received		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Funding Discrepancy		340.5	340.5	340.5	340.5	271.9	271.9	271.9	271.9
Inpatient Workload Est		52.75	52.75	52.75	52.75	52.75	52.75	52.75	52.75
Inpatient Workload Actual									
Inpatient Savings Est		\$164,897	\$164,897	\$164,897	\$164,897	\$172,262	\$172,262	\$172,262	\$172,262
Inpatient Savings Actual									
Outpatient Workload Est		299.62	299.62	299.62	299.62	299.62	299.62	299.62	299.62
Outpatient Workload Actual									
Outpatient Savings Est		\$30,861	\$30,861	\$30,861	\$30,861	\$32,239	\$32,239	\$32,239	\$32,239
Outpatient Savings Actual									
SDS Workload Est		0	0	0	0	0	0	0	0
SDS Workload Actual									
SDS Savings Est		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SDS Savings Actual									
Ancillary Savings Est		\$4,642	\$4,642	\$4,642	\$4,642	\$4,849	\$4,849	\$4,849	\$4,849
Ancillary Savings Actual									
Other Savings Est		\$63,300	\$63,300	\$63,300	\$63,300	\$65,093	\$65,093	\$65,093	\$65,093
Other Savings Actual									
Total Savings -Best		\$290,069	\$290,069	\$290,069	\$290,069	\$301,888	\$301,888	\$301,888	\$301,888
Total Savings -Most Likely		\$263,699	\$263,699	\$263,699	\$263,699	\$274,444	\$274,444	\$274,444	\$274,444
Total Savings -Worst		\$237,329	\$237,329	\$237,329	\$237,329	\$247,000	\$247,000	\$247,000	\$247,000
Total Savings -Actual		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Milestone Events

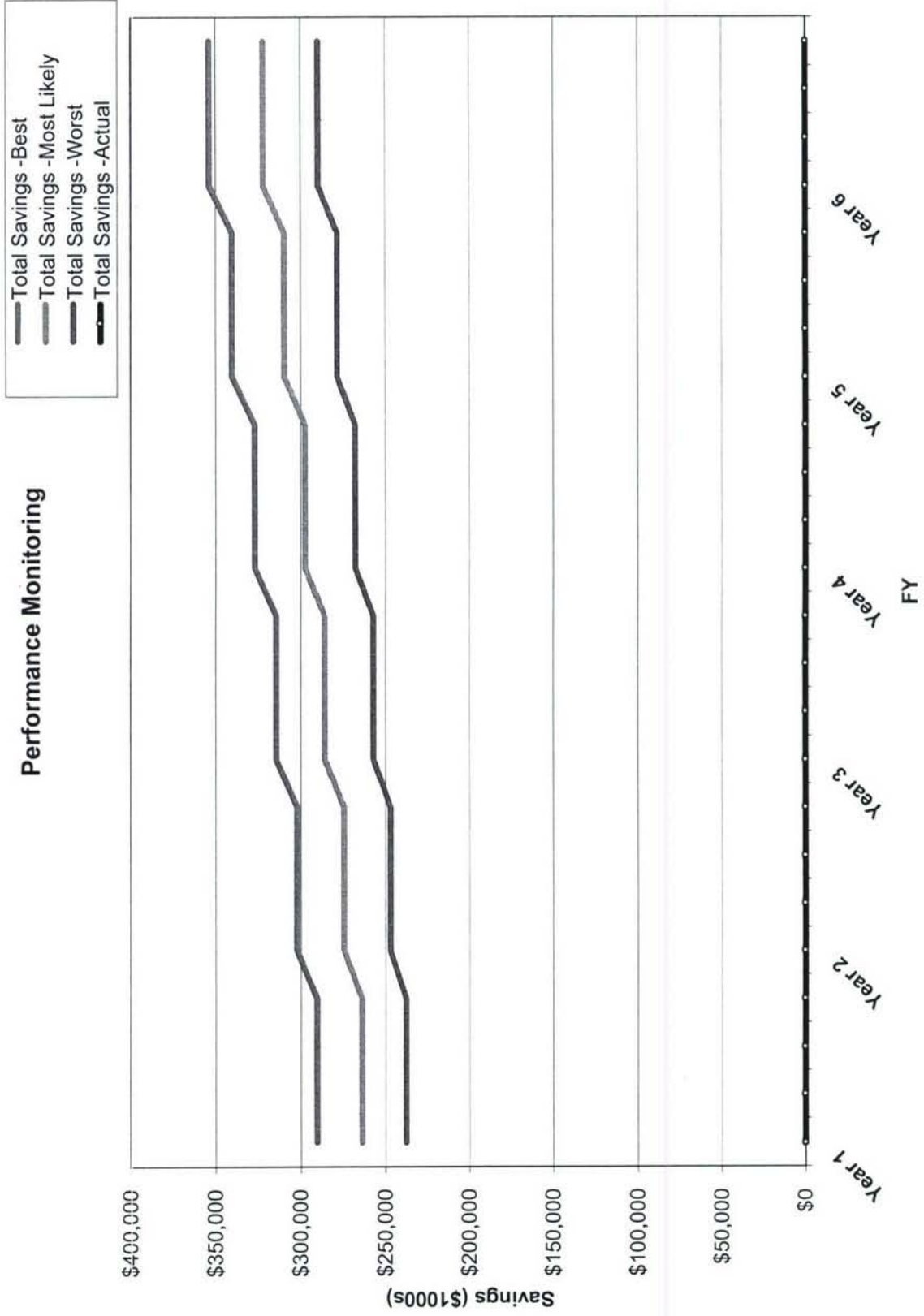
Monitoring

Year 3				Year 4			
1	2	3	4	1	2	3	4
272.8	272.8	272.8	272.8	272.8	273.4	273.4	273.4
272.8	272.8	272.8	272.8	273.4	273.4	273.4	273.4
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
272.8	272.8	272.8	272.8	273.4	273.4	273.4	273.4
52.75	52.75	52.75	52.75	52.75	52.75	52.75	52.75
\$179,956	\$179,956	\$179,956	\$179,956	\$187,994	\$187,994	\$187,994	\$187,994
299.62	299.62	299.62	299.62	299.62	299.62	299.62	299.62
\$33,679	\$33,679	\$33,679	\$33,679	\$35,184	\$35,184	\$35,184	\$35,184
0	0	0	0	0	0	0	0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$5,066	\$5,066	\$5,066	\$5,066	\$5,292	\$5,292	\$5,292	\$5,292
\$66,939	\$66,939	\$66,939	\$66,939	\$68,768	\$68,768	\$68,768	\$68,768
\$314,205	\$314,205	\$314,205	\$314,205	\$326,962	\$326,962	\$326,962	\$326,962
\$285,641	\$285,641	\$285,641	\$285,641	\$297,238	\$297,238	\$297,238	\$297,238
\$257,077	\$257,077	\$257,077	\$257,077	\$267,514	\$267,514	\$267,514	\$267,514
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Monitoring

1	Year 5			Year 6		
	2	3	4	1	2	3
273.7	273.7	273.7	273.7	273.6	273.6	273.6
273.7	273.7	273.7	273.7	273.6	273.6	273.6
0.0	0.0	0.0	0.0	0.0	0.0	0.0
273.7	273.7	273.7	273.7	273.6	273.6	273.6
52.75	52.75	52.75	52.75	52.75	52.75	52.75
\$196,391	\$196,391	\$196,391	\$196,391	\$205,164	\$205,164	\$205,164
299.62	299.62	299.62	299.62	299.62	299.62	299.62
\$36,755	\$36,755	\$36,755	\$36,755	\$38,397	\$38,397	\$38,397
0	0	0	0	0	0	0
\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$5,529	\$5,529	\$5,529	\$5,529	\$5,776	\$5,776	\$5,776
\$70,596	\$70,596	\$70,596	\$70,596	\$72,425	\$72,425	\$72,425
\$340,199	\$340,199	\$340,199	\$340,199	\$353,937	\$353,937	\$353,937
\$309,272	\$309,272	\$309,272	\$309,272	\$321,761	\$321,761	\$321,761
\$278,344	\$278,344	\$278,344	\$278,344	\$289,585	\$289,585	\$289,585
\$0	\$0	\$0	\$0	\$0	\$0	\$0

Performance Monitoring



Appendix B

Quality Criteria	NMCS	VA	TriCity	NHCP (plan)
Staffing ratio	1:6	1:6	1:6	1:6
Type of provider on PM and NOC shifts?	Provider inhouse	Provider inhouse	Provider inhouse	Provider on call
Is there a recreation technician?	Yes	No	Yes	No
Likelihood of continuity of care with primary provider?	Yes, requires travel from MCBP. No for patients from commands north of MCBP	Yes, requires travel from MCBP. No for patients from commands north of MCBP.	Yes, with easy travel within/around MCBP. N/A for other patients.	Yes with easy travel within/around MCBP. No for patients from commands north of MCBP.
Problems with follow up care?	Is a transient population, however AD patients can be ordered to care	Is a transient population, however AD patients can be ordered to care	Is a transient population, however AD patients can be ordered to care	Is a transient population, however AD patients can be ordered to care
Proximity to family?	40-70 miles	30 miles	10-30 miles	10-20 miles
Proximity to unit?	50 miles	40 miles	10-20 miles	10 miles
Are family members admitted? (Voluntary or involuntary)	Yes (planning for ~1-2 if AD do not required the bed)	No (not eligible)	Yes	No (not planned at this time)
Age of the facility?	1989	1960s	1961	197X
Condition of unit?	Good	Good	Good	Newly renovated
Beds available?	~30 beds	~35 beds	29 (9 on closed unit & 20 on open unit)	6
Frequency filled to capacity?	Occasionally	No	Closed unit - yes Open - no	Expected occasionally
Primary source of admissions (ED, FP clinic, MH clinic etc.)	ED	Mental Health ED	ED	ED
Quiet room/seclusion room/types of rooms/facilities?	2	2	2	2
Average length of stay?	6 days	10 days	7-14 days	N/A
Entertainment available (TV, functions, etc)	TV, exercise equipment, games, small outside area	TV, games, small outside area	TV, pool table, card table, walking, cooking classes, outside area	TV, games, large outside area, exercise equipment

Appendix C

The protection of an active duty member's rights fall under the purview of the Department of Defense Directive, Number 6490.1, dated October 1, 1997, current as of November 24th, 2003. This directive states:

Involuntary Admission. An involuntary hospital admission is appropriate only when a provider, privileged to admit psychiatric patients, makes a reasoned, good faith clinical judgment that the Service member has, or likely has, a severe mental disorder and poses a danger to himself, herself and/or others, such that the evaluation or treatment cannot reasonably be provided by a less restrictive level of care or when less intensive treatments would result in inadequate medical care. Hospitalization is appropriate only when consistent with the least restrictive alternative principle under the American Psychiatric Association's guidelines per reference (j). (p 5).

Continued Involuntary Psychiatric Hospitalization. Involuntary psychiatric hospitalization for continued evaluation and/or treatment, beyond an initial period of evaluation or stabilization not to exceed 72 hours, is appropriate only when a provider makes a reasoned, good faith clinical judgment that:

- The Service member is suffering from a serious mental disorder; and
- The Service member is at significantly increased risk for imminently dangerous behavior; and
- There is a reasonable prospect that the condition is treatable at the medical facility; and
- The Service member refuses continued inpatient treatment, or lacks the mental capacity to make an informed decision about continued inpatient treatment. (p. 5)

The provider conducting the review shall be an impartial, disinterested, privileged psychiatrist or other medical officer if a psychiatrist is not available, not in the Service member's chain of command, of the rank of O-4 or greater or civilian equivalent, who shall be appointed by the medical treatment facility (MTF) commanding officer. (p. 6)

Glossary

Bureau of Medicine and Surgery (BUMED) – The lead agency for Navy Medicine in which it's leadership is located and strategic planning and policymaking are established.

Catchment area - By law, a catchment area is used to define the geographic area surrounding an MTF with inpatient capabilities, where an inpatient NAS is required for nonenrolled beneficiaries. Under TRICARE, a catchment area is also used as a planning tool to identify the eligible population, and define areas where managed care support contractors must offer the TRICARE Prime benefit.

Defense Base Realignments and Closures (BRAC) - congressionally authorized process DoD has previously used to reorganize its base structure to more efficiently and effectively support our forces, increase operational readiness and facilitate new ways of doing business

Defense Medical Information System Identification (DMIS ID) - The Defense Medical Information System identification code for fixed medical and dental treatment facilities for the tri-Services, the U.S. Coast Guard, and USTFs. In addition, DMIS IDs are given for non-catchment areas, administrative units such as the Surgeon General's office of each of the tri-Services, and other miscellaneous entities.

Defensive medicine - Medical practices designed to avert the future possibility of malpractice suits. In defensive medicine, responses are undertaken primarily to avoid liability rather than to benefit the patient. Doctors may order tests, procedures, or visits, or avoid high-risk patients or procedures primarily (but not necessarily solely) to reduce their exposure to malpractice liability. Defensive medicine is one of the least desirable effects of the rise in medical litigation. Defensive medicine increases the cost of health care and may expose patients to unnecessary risks.

Diagnosis Related Group (DRG) - Diagnosis Related Groupings are an American patient classification system that describes the types of patients treated by a hospital (i.e. its case mix).

Executive Steering Council (ESC) – Key leadership personnel from within the organization utilized to form a council for advising the Commanding Officer on facility business and clinical decisions.

HM8485 Psychiatry Technician – Active duty or reservist Navy member who has trained to obtain the Navy Enlisted Classification (NEC) 8485. Provides for the care and treatment of neuropsychiatric patients and administers psychological tests. Assists Medical Officers in administering special neuropsychiatric therapy procedures, cares for patients per nursing methods, observes patients and reports manifestations of disease, maintains neuropsychiatric ward and clinic equipment.

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)
- A method for coding diagnoses to receive reimbursement

Medical Expense and Reporting System (MEPRS) - The Medical Expense and Performance Reporting System (MEPRS) is a cost management system that accumulates and reports expenses, manpower, and workload performed by the Department of Defense (DoD) fixed military medical and dental treatment facilities. It is the basis for establishing a uniform reporting methodology.

Medical Military Facilities Construction Criteria - Handbook provides mandatory design and construction criteria for facilities in the DoD Medical Military Construction Program.

Milieu – Environment or setting. The physical surroundings and staff attitude are designed to enhance the effectiveness of the therapies and promote the patient’s rehabilitation. Additionally, the interaction between patients can provide a safe setting for patients to practice social communications.

Military Treatment Facility (MTF) - Shorthand for all uniformed services hospitals and clinics including the several former Public Health Service hospitals that are now called “designated providers” under TRICARE

Multi-Service Market - In markets in which more than one Service military treatment facility (MTF) is present, referred to as multiple service markets. Multiple service markets are those Prime Areas in which more than one Service military treatment facility is present, and significant beneficiary health care costs exist.

Multi-Service Market Office (MSMO) - Senior Market Manager will be responsible for coordinating the development of a single, integrated business plan. This includes integrated plans for appointing services, resource sharing (among the Services and with contractor support), optimization initiatives and DoD/VA sharing opportunities.

Navy Medicine West (NMW) - Exercises command and fiscal oversight over subordinate commands assigned to the Navy Medicine region; oversees the economical and effective delivery of medical, dental, and other health care services in the area of responsibility as directed by Navy Medicine higher authority; trains and provides medical personnel to support the full spectrum of Navy and Marine Corps combat and contingency operations as directed by the Navy Medicine higher authority; and ensures planning preparation for disaster and contingency support within the region.

Operating tempo (OPTEMPO) - unit activity levels often referring to deployments.

Post Traumatic Stress Disorder (PTSD) - a psychiatric disorder that can occur following the experience or witnessing of life-threatening events such as military combat, natural disasters, terrorist incidents, serious accidents, or violent personal assaults like rape.

Prospective Payment System (PPS) – Payment method for reimbursing at a set rate for services classified into groups called Ambulatory Payment Classifications or APCs. Services in each APC are similar clinically and in terms of the resources they require.

Referral - The process of sending a patient from one practitioner to another for health care services. Health Plans may require that designated primary care providers authorize a referral for coverage of specialty services.

Region – A geographic area determined by the government for civilian contracting of medical care and other services for TRICARE eligible beneficiaries.

Third Party Claims Program (TPC) - recovers funds from health insurance companies, other than TRICARE, for the cost of medical care delivered at a MTF to insured patients.

Tri-Service Business Planning Tool – Tool which combines the means and procedures of each Service's business planning process into one Tri-Service Tool. The tool uses volumes of data from the EASIV repository to assist MTFs in determining capacity of providers.

TRICARE - A Tri-Service managed care program that provides all health care for DoD beneficiaries within a DoD geographical region. It integrates MTF direct care and CHAMPUS civilian provider resources by forming partnerships with military medical personnel and civilian contractors.

Venture Capital Initiative Tool (VCI) – tool utilized by DoD medical agencies to assess the financial cost and benefits of providing a service.

Voluntary beneficiaries - A person who is eligible for TRICARE benefits. Includes active duty service members, active duty family members, retired service members and their families. Family members include spouses and unmarried natural or stepchildren up to the age of 21 (or 23 if full-time students at accredited institutions of learning).

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